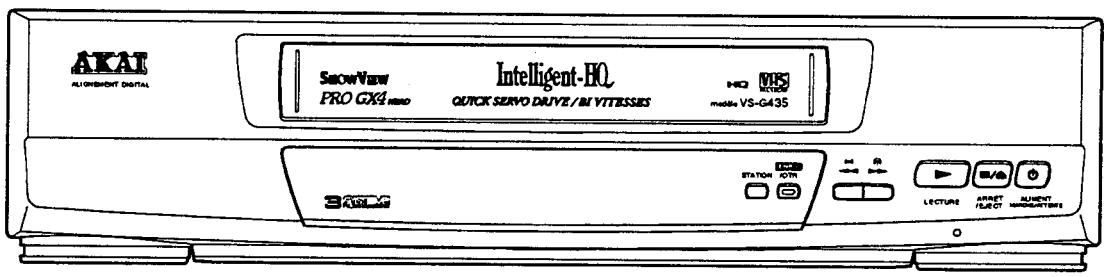
VIDE-V24048

VS-G220,G225,G235
VS-G420,G425,G435
SEG

AKAI SERVICE MANUAL



HIGH QUALITY PAL SECAM SHOWVIEW

MODEL VS-G435SEG

VIDEO CASSETTE RECORDER

MODEL VS-G220SEG

MODEL VS-G225SEG

MODEL VS-G235SEG

MODEL VS-G420SEG

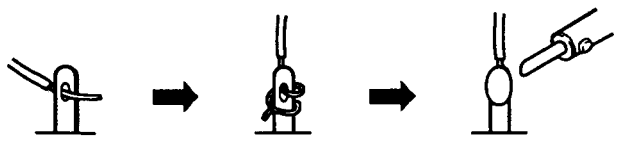
MODEL VS-G425SEG

MODEL VS-G435SEG

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.

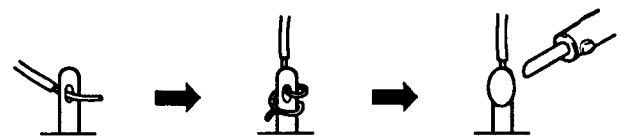


6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

★ CONSIGNES DE SECURITE

PRECAUTIONS A PRENDRE PENDANT L'ENTRETIEN

1. Les pièces marquées du symbole ⚠ sont vitales à la sécurité. Ne les remplacer que par des pièces ayant les numéros spécifiés.
2. En plus des raisons de sécurité, certaines pièces et ensembles sont repérés pour des raisons de conformité à la règlemenation, comme celle s'appliquant aux émissions sur bande interdite.
   Ces pièces et ensembles ne doivent également être remplacés que par ceux spécifiés.
   Exemples : Convertisseurs RF, unités tuners, sélecteurs d'antenne, câbles RF, condensadeurs d'arrêt de bruit, filtres d'arrêt de bruit, etc.
3. Utiliser les câbles internes spécifiés, plus particulièrement:
   1) Câbles recouverts d'un tube en PVC
   2) Câbles à double isolement
   3) Conducteurs de haute tension
4. Utiliser les matériaux isolants spécifiés pour les pièces sous tension pouvant représenter une source de danger, plus particulièrement:
   1) Ruban isolant
   2) Tubes en PVC
   3) Entretoises (barrières isolantes)
   4) Plaques isolantes pour les transistors
   5)Vis en plastique pour la fixation des micro-contacts
5. Lors du remplacement d'organes côté primaire CA (transformateurs, cordons d'alimentation, condensateurs d'arrêt de bruit, etc.), enrouler solidement l'extrêmité des câbles autour des bornes avant de souder.



6. Faire attention que les câbles n'entrent pas en contact avec des pièces génératrices de chaleur (dissipateurs thermiques, résistances à film métal oxyde, résistances de fusible, etc.).
7. Vérifier que les câbles remplacés ne sont pas en contact avec des arêtes vives ou des parties efilées.
8. Vérifier également les zones autour des pièces réparées.
9. Faire attention de ne pas laisser de matières étrangères (vis, gouttes de soudure, etc.) à l'intérieur de l'appareil.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M Ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

CONTROLE DE SECURITE A EFFECTUER APRES REPARATION

Après avoir effectué une réparation, mesurer le courant de fuite ou la résistance afin de déterminer que les pièces exposées sont suffisamment isolées du circuit d'alimentation. La mesure du courant de fuite doit être effectuée, dans les conditions normales de fonctionnement de l'appareil, entre des pièces de métal accessibles (comme par exemple châssis, bornes de terre, prises de microphones, connecteurs d'entrée/sortie de signaux, etc.) et la terre en utilisant une résistance de 1500 ohms mise en parrallèle avec un condensateur de 0,15 µF. Le courant de fuite doit être inférieur à 0,5 mA eff. CA. La mesure de la résistance doit être effectuée entre des pièces de métal accessibles exposées et les fiches de la prise du cordon d'alimentation, l'interrupteur d'alimentation (si l'appareil en est pourvu) étant activé. La résistance ne doit pas être supérieure à 2,2 M ohms.

PARTICIPEZ A LA PROTECTION DE L'ENVIRONNEMENT

Les piles usées portant le sigle ISO de recyclage, les petits accumulateurs (piles rechargeables), les mini-piles (pastilles) et les piles démarreurs ne doivent pas être jettées avec les ordures ménagères.
Veuillez les porter à un entrepôt approprié.

★ SPECIFICATIONS

Format	VHS standard (SECAM, PAL, MESECAM)
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	
G220,225,235SEG	2 video heads
G420,425,435SEG	4 video heads
RF input	System L VHF : ch B - C, 1 - 6, UHF : ch 21 - 69 Cable : ch B - Q System B, G VHF : ch 2 - 12, UHF : ch 21 - 69 Cable : ch S1' - S3', S1 - S41
Recording (line input)	SECAM/PAL (MESECAM)
Playback (line output)	SECAM/PAL (MESECAM)
Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines (PAL) More than 220 lines (SECAM)
Audio	
Line input level	–6 dBs/50 k ohms, unbalanced
Line output level	–6 dBs/1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 - 8,000 Hz
Recording/playback time	
G220,225,235SEG	240 min. with E-240 cassette
G420,425,435SEG	
SP mode	240 min. with E-240 cassette
LP mode	480 min. with E-240 cassette
Tape speed	
G220,225,235SEG	23.39 mm/sec
G420,425,435SEG	
SP mode	23.39 mm/sec
LP mode	11.695 mm/sec
Quick finder	Approx. 5 times normal speed
FF, REW time	Approx. 140 sec. with E-180 cassette
Timer	
Program	4 programs/1 year and OTR
Clock reference	Quartz crystal
Display	FLD (Tape counter, Timer, etc.)
Power requirements	220 - 240 V AC, 50 Hz
Power consumption	18 W
Operating temperature	5°C - 40°C
Dimensions	380 (W) x 90 (H) x 276 (D)mm
Weight	4.0 kg

Standard accessories

Antenna cable	1
Remote control unit	1
Batteries for remote control	2
Operator's manual	1

0 dBs = 0.775 VRMS

* For improvement purposes, specifications and design are subject to change without notice.
* SHOWVIEW IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP. SHOWVIEW SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

★ CARACTERISTIQUES

Format	Standard VHS (SECAM, PAL, MESECAM)
Système d'enregistrement vidéo	Système de balayage hélicoïdal à deux têtes rotatives, inclinaison en azimuth
Têtes rotatives	
G220,225,235SEG	2 têtes vidéo
G420,425,435SEG	4 têtes vidéo
Entrée RF	Système L VHF : Canaux B - C, 1 - 6 UHF : Canaux 21 - 69 Câble : Canaux B - Q Système B, G VHF : Canaux 2 - 12, UHF : Canaux 21 - 69 Câble : Canaux S1" - S3", S1 - S41
Enregistrement (Entrée de ligne)	SECAM/PAL (MESECAM)
Lecture (Sortie de ligne)	SECAM/PAL (MESECAM)
Vidéo	
Niveau d'entrée de ligne	0,5 - 2,0 Vc-c/75 ohms, asymétrique
Niveau sortie de ligne	1,0 Vc-c/75 ohms, asymétrique
Rapport Signal/Bruit	Plus de 45 dB
Résolution horizontale	Plus de 250 lignes (PAL) Plus de 220 lignes (SECAM)
Audio	
Niveau d'entrée de ligne	–6 dBs/50 k ohms, asymétrique
Niveau sortie de ligne	–6 dBs/1 k ohms, asymétrique
Rapport S/B	Plus de 40 dB
Réponse en fréquence	70 - 8.000 Hz
Durée d'enregistrement/lecture	
G220,225,235SEG	240 min. avec cassette E-240
G420,425,435SEG	
Mode SP	240 min. avec cassette E-240
Mode LP	480 min. avec cassette E-240
Vitesse de défilement	
G220,225,235SEG	23,39 mm/sec.
G420,425,435SEG	
Mode SP	23,39 mm/sec.
Mode LP	11,695 mm/sec.
Recherche rapide	A environ 5 fois la vitesse normale
Durée de rembobinage /avance rapide	Env. 140sec. avec cassette E-180
Minuterie	
Programme	4 programmes/1 an référence et OTR
Référence horloge	A cristal de quartz
Affichage	Affichage fluorescent (Compteur de bande, minuterie, etc.)
Alimentation	220 - 240 V CA, 50 Hz
Consommation	18 W
Température de fonctionnement	5°C - 40°C
Dimensions	380 (L) x 90 (H) x 276 (D) mm
Poids	4,0 kg

Accessoires standard

Cordon de connection	1
Unité de télécommande	1
Piles pour télécommande	2
Mode d'emploi1	1

0 dBs = 0.775 VRMS

* Les spécifications et le design peuvent être modifiés sans aucun avis pour y introduire des améliorations.
* SHOWVIEW EST UNE MARQUE DEPOSEE PAR GEMSTAR DEVELOPEMENT CORP. LE SYSTEME SHOWVIEW EST FABRIQUE SOUS LICENCE DE GEMSTAR DEVELOPEMENT CORPORATION.

★ INFORMATIONS

SYMBOLS FOR PRIMARY DESTINATION

Unit destinations are indicated with letters as shown below.

Symbol	Power Classification	Primary destination	TV System		
			Color	VHF	UHF
EA	S	Australia	PAL	B	G
EDG	E	East Europe	PAL	B, D	G, K
EDI	E	China	PAL	D	K, I
	Y6	Hong Kong			
EK	B	England	PAL	–	I
EM	E	Middle East, South-East Asia	PAL	B	G
	Y7	Saudi Arabia			
EO	V	Italy	PAL	B	G
EOH	E	North Europe	PAL	B	G
	S	New Zealand			
	Y1	Holland, Belgium, Spain			
	Y2	Spain			
EOG	V	Germany, Austria	PAL	B	G
ES	E	South Africa, Ireland	PAL	I	I
	Y6	Hong kong			
EGN	E	South East Asia	PAL, NTSC, SECAM	B, D, M	G, K, I, M
	Y1	France			
	Y2	South East Asia, UAE			
	Y6	Hong Kong			
	U5	Hong Kong			
SEG	E	France	SECAM	L, B	L, G
SK	E	Latin America, Oceania	SECAM	D	K

CODES DE DESTINATION DES NOMS DE MODELE

Les codes indiquent le pays de destination de l'appareil de la manière suivante.

Code	Classe Alimentation	Destination principale	Système TV		
			Color	VHF	UHF
EA	S	Australie	PAL	B	G
EDG	E	Europe de l'Est	PAL	B, D	G, K
EDI	E	Chine	PAL	D	K, I
	Y6	Hong Kong			
EK	B	Angleterre	PAL	–	I
EM	E	Moyen orient, Asie du Sud Est	PAL	B	G
	Y7	Arabie Saoudite			
EO	V	Italie	PAL	B	G
EOH	E	Europe du Nord	PAL	B	G
	S	Nouvelle Zélande			
	Y1	Hollande, Belgique, Espagne			
	Y2	Espagne			
EOG	V	Allemagne, Autriche	PAL	B	G
ES	E	Afrique du Sud, Irlande	PAL	I	I
	Y6	Hong Kong			
EGN	E	Asie du Sud Est	PAL, NTSC, SECAM	B, D, M	G, K, I, M
	Y1	France			
	Y2	Asie du Sud Est, E.A.U			
	Y6	Hong Kong			
	U5	Hong Kong			
SEG	E	France	SECAM	L, B	L, G
SK	E	Amérique latine, Océanie	SECAM	D	K

TRACKING/STABILITY ADJUSTMENT

To correct tracking during the normal playback, slow or still mode, only the remote control buttons can be used for the following adjustment.

- **To correct tracking during playback**
  If the tracking is not corrected satisfactorily by the automatic tracking function, press the remote control's "<" or ">" button until the picture is clear.
- **To correct tracking during the still mode**
  Press the remote control's "<" or ">" button repeatedly until the picture is clear.
- **To correct picture shake during the slow motion or still mode**
  Press the remote control's "∧" or "∨" button repeatedly until the picture shake is corrected.

ERROR ANNOUNCEMENT

When a malfunction occurs, the following error indicators appear on the FL display to indicate the problem when the power is turned off.

Err 1 = AL power supply has short circuited.
Err 2 = The loading motor has stopped. (When the mechanism position detect switch is not able to read the specified code, that is to say not able to reach the specified position within the specified time.)
Err 3 = The drum motor has stopped.
(When the drum motor does not rotate due to condensation, etc.)
Err 5 = The capstan motor has stopped.
(When the capstan motor does not rotate.)

PRESETS IN THE TEST MODE

1) Engaging the "TEST MODE"

To set the VCR to the test mode, press the "reset" button on the front panel first then plug in the AC power cord while pressing and holding both the "POWER" and "STOP/EJECT" buttons (on the front panel) at the same time. Next, after a few seconds, release the buttons and press the "POWER" button.
Press the "reset" button to disengage the "TEST MODE". (The test mode is not disengaged, even if the AC cord is disconnected, without pressing the "reset" button.)

NOTE: Once the "reset" button has been pressed, clock and program data will be cancelled.

REGLAGE D'ALIGNEMENT/STABILITE

Pour corriger l'alignement pendant la lecture normale, pendant le mode de ralenti ou d'arrêt sur image, seules les touches de la télécommande peuvent être utilisées pour effectuer le réglage suivant.

- **Pour corriger l'alignement pendant la lecture**
  Si l'alignement n'est pas corrigé de manière satisfaisante par la fonction d'alignement automatique, appuyer sur la touche "<" ou ">" de la télécommande jusqu'à ce que l'image soit nette.
- **Pour corriger l'alignement pendant le mode de ralenti**
  Appuyer répétitivement sur la touche "<" ou ">" de la télécommande jusqu'à ce que l'image soit nette.
- **Pour corriger le tremblement d'image pendant le mode de ralenti ou d'arrêt sur image**
  Appuyer répétitivement sur la touche "∧" ou "∨" de la télécommande jusqu'à ce que le tremblement d'image soit corrigée.

MESSAGE D'ERREUR

Lorsqu'un fonctionnement défectueux se produit, les indicateurs d'erreur suivants apparaissent sur l'affichage fluorescent (FL) pour indiquer le problème lorsque l'appareil est mis hors circuit.

Err 1 = L'alimentation a été court-circuitée.
Err 2 = Le moteur de chargement a été arrêté anormalement.
(Lorsque le commutateur de détection de la position du mécanisme n'est pas capable de lire la position spécifiée dans le délai spécifié.)
Err 3 = Le moteur du tambour a été arrêté.
(Lorsque le moteur du tambour ne tourne pas à cause d'une condensation, etc.)
Err 5 = Le moteur du cabestan a été arrêté.
(Lorsque le moteur du cabestan ne tourne pas.)

PREREGLAGES EN MODE TEST

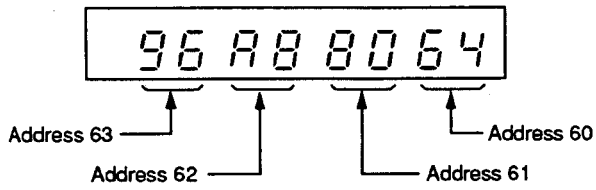
1) Activation du "MODE TEST"

Pour régler le magnétoscope en mode test (TEST MODE), appuyer d'abord sur la touche de remise à zéro du panneau avant, ensuite brancher le cordon d'alimentation secteur tout en appuyant en même temps sur les touches d'alimentation (POWER) et d'arrêt/éjection (STOP/EJECT) du panneau avant. Ensuite, après quelques secondes, relâcher les touches et appuyer à nouveau sur la touche d'alimentation (POWER).
Appuyer sur la touche de réinitialisation pour désactiver le «mode test». (Le mode test n'est pas désactivé, même si le cordon d'alimentation est débranché sans que la touche de réinitialisation ait été enfoncée.)

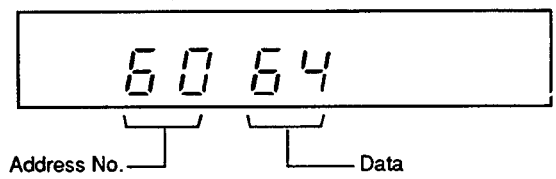
REMARQUE:
Dès que la touche de réinitialisation a été enfoncée, les données de l'horloge et du programme sont effacées.

2) Model code preset

1. Engage the "test mode". The model code will be displayed in the FL display in 8 digit form.



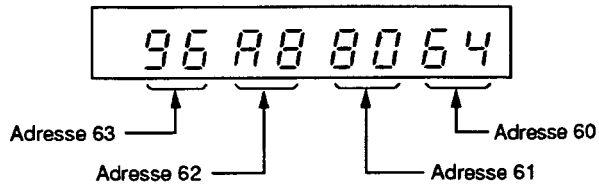
2. While pressing both the "FF" and "RWD" buttons, press the "reset" button. (Never release the "FF", "RWD" buttons and "reset" button at the same time. Make sure to release the "reset" button first.)
   The address number will be shown in 2 digits in the minutes display of the FL display and its data will be shown in 2 digits in the seconds display.



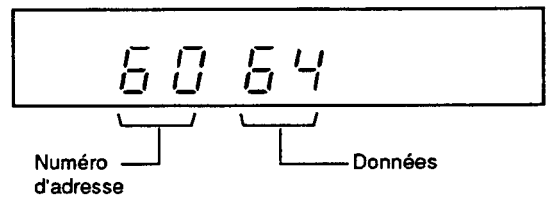
3. Select address "60" by pressing the "FF" or "FWD" button.
4. Choose the data in the address 60 column, that corresponds to the model number you are working on, from the following list. Set the chosen data value by pressing the "STOP" or "PLAY" button.

2) Préréglage du code du modèle

1. Activer le "mode test". Le code du modèle est affiché sur l'affichage fluorescent (FL) sous forme de 8 chiffres.



2. Tout en appuyant sur la touche d'avance rapide (FF) et de rembobinage (RWD), appuyer sur la touche de réinitialisation (RESET). (Ne jamais relâcher en même temps les touches d'avance rapide (FF), de rembobinage (RWD) et de réinitialisation (RESET). S'assurer de relâcher les touches d'avance rapide (FF) et de rembobinage (RWD), après avoir relâché la touche de réinitialisation (RESET).) Le numéro d'adresse sera indiqué par 2 chiffres sur l'affichage des minutes de l'affichage fluorescent (FL) et les données seront indiquées par 2 chiffres sur l'affichage des secondes.



3. Sélectionner l'adresse "60" en appuyant sur la touche d'avance rapide (FF) ou de rembobinage (REW).
4. Choisir les données dans la colonne d'adresse 60 qui correspond au numéro de modèle sur le quel on travaille à partir de la liste suivante. Régler la valeur des données choisies en appuyant sur la touche d'arrêt (STOP) ou sur la touche de lecture (PLAY).

MODEL (MODELE)	MODEL CODE (CODE DE MODELE)	ADDRESS (ADRESSE)			
		60	61	62	63
VS-G220SEG	16298061	61	80	29	16
VS-G225SEG	36298061	61	80	29	36
VS-G235SEG	96A88061	61	80	A8	96
VS-G420SEG	16298064	64	80	29	16
VS-G425SEG	36298064	64	80	29	36
VS-G435SEG	96A88064	64	80	A8	96

(On the FL display, B and D are indicated with small letters and E is indicated with –.)

5. Memorize the data into the EEP ROM IC by pressing the "REC" button.
6. The address "61" and its data will be shown in the FL display. Repeat the presetting (steps 4 to 5) for addresses "61", "62" and "63" in the same manner as address "60".
7. Press the "reset" button to disengage the model code preset mode.

NOTE : This version code preset is absolutely necessary when the IC404 (EEP-ROM) on the MAIN PCB is replaced.

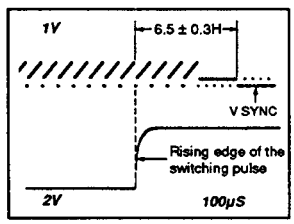
(Sur l'affichage fluorescent (FL), B et D sont indiqués par des minuscules et E est indiqué par –).

5. Mémoriser les données dans le CI EEP ROM en appuyant sur la touche d'enregistrement (REC).
6. L'adresse 61 et les données correspondantes sont affichées sur l'affichage fluorescent (FL). Répéter le préréglage (étapes 4 à 5) pour les adresses "61", "62" et "63" de la même manière que pour l'adresse "60".
7. Appuyer sur la touche de réinitialisation (RESET) pour désactiver le mode de préréglage du code du modèle.

REMARQUE : Ce préréglage de code de modèle est absolument nécessaire lorsque le circuit intégré IC404 (EEP-ROM) de la PCB PRINCIPALE est remplacée.

3) Video switching point preset

1. Engage the "test mode".
2. Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the test point of the V-SWP on the PRE AMP PCB for triggering.
   (The TP832 for models VS-G220, G225 and G235SEG or TP802 for models VS-G420, G425 and G435SEG.)
3. Play back the reference tape TF-530RFS (Part No.: AT-751775). Check the seconds display of the FL display so that "1F" (center position in the tracking range) is indicated at this point. If not indicated, press the "<" or ">" button on the remote control until "1F" is indicated.
4. Press the "REC" button during playback.
5. Confirm that the switching point is positioned 6.3 ±0.3 H before the left edge of the V-sync as shown.



NOTE :

a) Make sure that the A/C head phase adjustment has been adjusted correctly before making video switching point preset. (Refer to step 5-3-3)
b) This switching point preset is absolutely necessary after the following replacements.

- When the video head drum (upper drum) is replaced.
- When the DRUM MOTOR PCB or DRUM MOTOR's ROTARY MAGNET (ROTARY PLATE) is replaced.
- When the SERVO/SYSCON MI-COM or EEP ROM IC on the MAIN PCB is replaced.

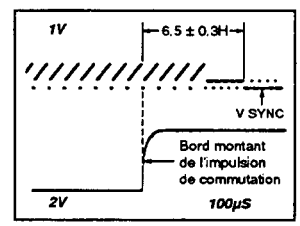
4) Memorization of the reference RF envelope detect voltage (I-HQ)

For correct operation of the I-HQ tape tuning system, memorization of the reference RF envelope detect voltage is absolutely necessary. When the VIDEO HEAD DRUM, PRE AMP PCB or EEP ROM IC in the MAIN PCB is replaced for any reason, memorize the reference RF envelope detect voltage according to the following procedure.

1. Set the tape speed to "SP mode".
2. Make a recording on the I-HQ test tape "TF-556AT" (Part No. : AT-751822J) and rewind it to the exact point where the recording was started.
3. Set the VCR to the "test mode" then start playback.
4. Reference RF envelope detect voltage data in the memory is displayed in 2 digits in the hours display part of the FL display and the present envelope detect voltage data is displayed in 2 digits in the minutes display part (the data is displayed in hexadecimal numbers).
5. After the auto tracking has been activated, press the "CANCEL" button on the remote control. The present RF envelope detect voltage data will be transferred to

3) Préréglage du point de commutation vidéo

1. Activer le mode test.
2. Connecter le canal 1 (CH-1) d'un oscilloscope à la sortie vidéo (VIDEO OUT) et connecter le canal 2 (CH-2) au point test de V-SWP sur la PCB PREAMPLI pour le déclenchement. (TP832 pour les modèles VS-G220, G225 et G235SEG, TP802 pour les modèles VS-G420, G425 et G435SEG.)
3. Effectuer la lecture de la cassette de référence TF-530RFS (No. de pièce : AT-751775).
   Vérifier l'affichage des secondes de l'affichage fluorescent (FL) de sorte que "1F" (position centrale de la plage d'alignement) soit indiqué à ce point. Si ce n'est pas le cas, appuyer sur la touche "<" ou ">" de la télécommande jusqu'à ce que "1F" soit indiqué.
4. Appuyer sur la touche d'enregistrement (REC) pendant la lecture.
5. Confirmer que le point de commutation est positionné à 6,5 ±0,3 H avant le bord gauche de la synchronisation verticale comme indiqué.



REMARQUE:

a) S'assurer que le réglage de phase de la tête A/C a été ajusté correctement avant le préréglage du point de commutation vidéo. (Se référer à l'étape 5-3-3).
b) Ce préréglage du point de commutation est absolument nécessaire après avoir effectué le remplacement suivant.

- Lorsque le tambour de tête vidéo (tambour supérieur) est remplacé.
- Lorsque la PCB DU MOTEUR DETAMBOUR ou L'AIMANT TOURNANT DU MOTEUR DE TAMBOUR (PLAQUE ROTATIVE) est remplacé.
- Lorsque le SERVO/SYCON MI-COM ou EEP ROM IC sur la PCB PRINCIPALE est remplacée.

4) Mémorisation de la tension de détection de l'enveloppe FR de référence (I-HQ)

Pour un fonctionnement correct du système de syntonisation de la bande I-HQ, la mémorisation de la tension de détection de l'enveloppe FR de référence est absolument nécessaire. Lorsque le TAMBOUR DE TETE VIDEO, la PCB PREAMPLI ou le EEPROM IC dans la PCB PRINCIPALE est remplacé pour une raison quelconque, mémoriser la tension de détection de l'enveloppe FR de référence selon la procédure suivante.

1. Régler la vitesse de bande en mode "SP".
2. Faire un enregistrement I-HQ sur la bande test "TF-556AT" (No. de pièce : AT-751822J) et la rembobiner jusqu'au point exact où l'enregistrement a démarré.
3. Régler le magnétoscope en mode test, puis commencer la lecture.

the hour display 2 digits and memorized in the EEP ROM IC.

6. Cancel the "test mode" then set the tape speed to "LP mode" and repeat steps 2 to 5. (VS-G420, G425 and G435SEG models only.)

5) Other facilities in the test mode

1. Tracking position display

In the "SP play" mode, tracking position data can be displayed on the FL display. Data is displayed in 64 steps in hexadecimal numbers from "00" to "3F" in the seconds display part on the FL display. Pressing the "TV/VCR" button on the remote control during playback directly sets the tracking to the maximum "3F" position and pressing the "COUNTER RESET" button sets it to the minimum "00" position.

Pressing the "PLAY" button during playback sets tracking to the center position "1F" automatically. If "1F" does not appear, even when the "PLAY" button is pressed, keep pressing the "<" or ">" button on the remote control until the "1F" appears and then press the "OK" button to memorize the position.

2. Suspension of the tape protection system

When the VCR is not in the "test mode", the "STILL" mode will be released after 5 minutes in order to protect the tape (the VIDEO HEAD DRUM stops rotating). However, the "STILL mode" will not be released during the "test mode".

4. Les données de tension de détection de l'enveloppe FR de référence dans la mémoire sont affichées par 2 chiffres sur l'affichage d'heure de l'affichage fluorescent (FL) et les données de tension de détection de l'enveloppe actuelle sont affichées par 2 chiffres sur l'affichage des minutes (les données sont affichées en nombres hexadécimaux).
5. Lorsque l'alignement automatique a été activé, appuyer sur la touche d'annulation (CANCEL) de la télécommande. Les données de tension de détection de l'enveloppe FR actuelle sont transférées à la section d'heure à 2 chiffres dans le EEP ROM IC.
6. Annuler le mode test, puis régler la vitesse de bande en mode "IP" et répéter les étapes 2 à 5. (Uniquement pour les modèles VS-G420, G425 et G435SEG).

5) Autres facilités en mode test

1. Affichage de la position d'alignement

En mode de lecture SP, les données de la position d'alignement peuvent être affichées sur l'affichage fluorescent (FL). Les données sont affichées en 64 paliers en nombre hexadécimaux de "00" à "3F" sur la partie d'affichage des secondes de l'affichage fluorescent (FL). Le fait d'appuyer sur la touche téléviseur/magnétoscope (TV/VCR) de la télécommande pendant la lecture, régle directement l'alignement au maximum à la position "3F" et le fait d'appuyer sur la touche de remise à zéro du compteur (COUNTER RESET) le régle au minimum à la position "00".

Le fait d'appuyer sur la touche de lecture (PLAY) pendant la lecture, régle l'alignement automatiquement sur la position centrale "1F". Si "1F" n'apparaît pas même si la touche de lecture (PLAY) est enfoncée, maintenir la touche de curseur "<" ou ">" de la télécommande enfoncée jusqu'à ce que "1F" soit indiqué et ensuite appuyer sur la touche "OK" pour mémoriser la position.

2. Suspension du système de protection de bande

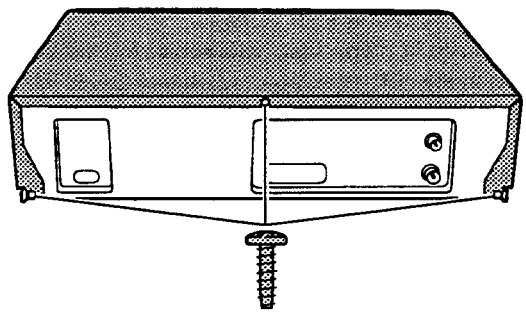
Lorsque le magnétoscope n'est pas en "mode test", le mode d'arrêt sur image (STILL) est libéré après 5 minutes afin de protéger la bande (le TAMBOUR DE TETE VIDEO s'arrête de tourner). Toutefois, le mode d'arrêt sur image (STILL) n'est pas libéré pendant le "mode test".

I. DISASSEMBLY / DEMONTAGE

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

En cas de problèmes ou autres nécessitant le démontage, procerder dans l'ordre indiqué sur l'illustration. Remonter en procédant dans l'ordre inverse.
Lors de la repose du panneau avant, maintenir le volet de la fente d'introduction de la cassette en position haute (ouverte).

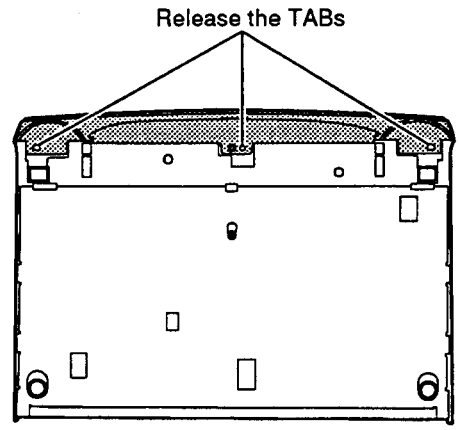
1. Removal of UPPER COVER
1. Dépose du panneau supérieur (UPPER COVER)

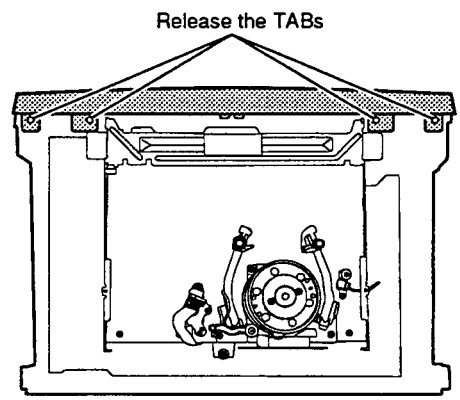


Slide the UPPER COVER backwards approx. 1 cm then lift the back part of the UPPER COVER up to remove.

Glisser le COUVERCLE SUPERIEURE vers l'arrière de 1 cm environ, ensuite soulever la partie arrière du COUVERCLE SUPERIEUR pour le déposer.

2. Removal of FRONT PANEL
2. Dépose du panneau avant (FRONT PANEL)





II. PRINCIPAL PARTS LOCATION

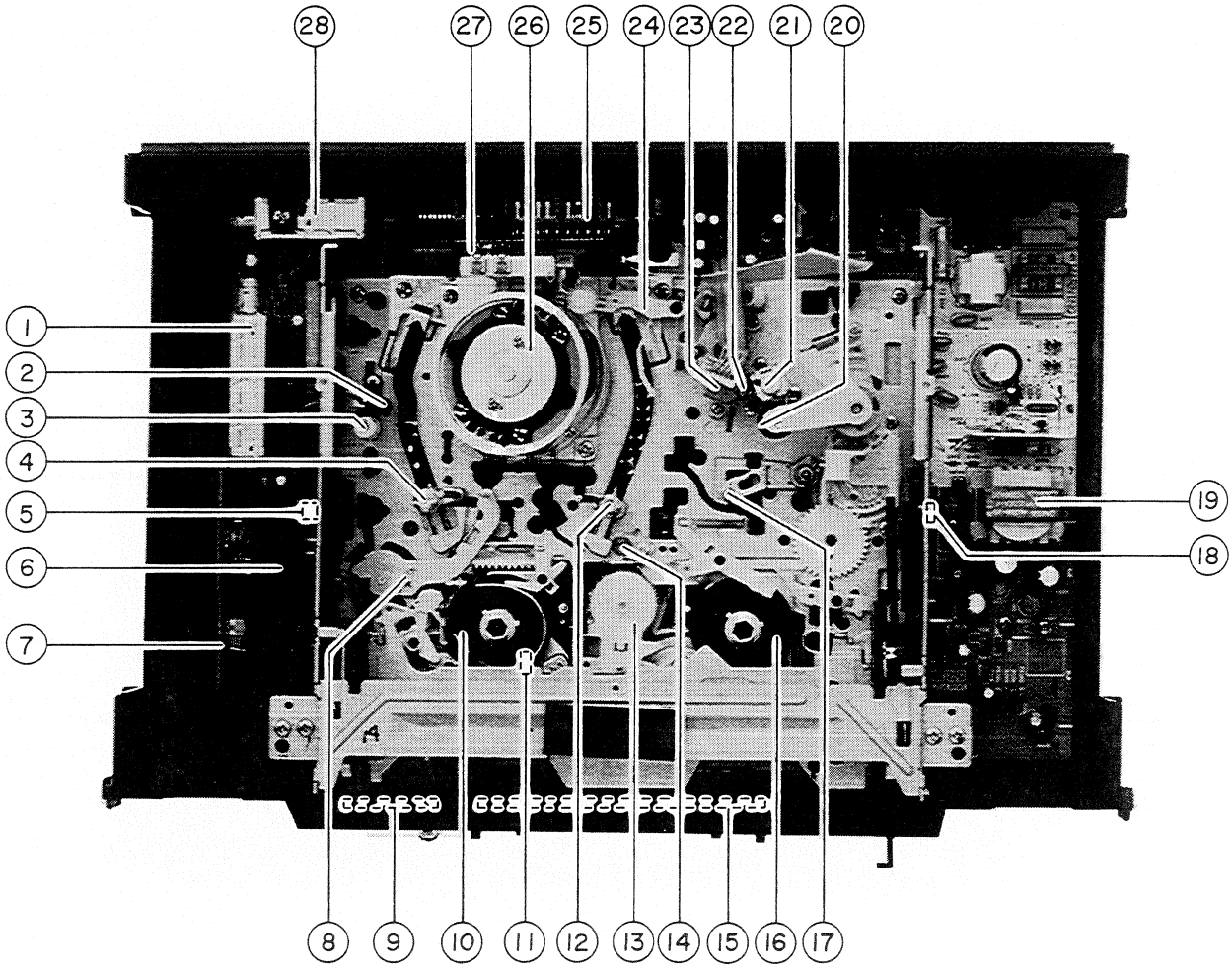


Fig. 2-1 Top view

1. TUNER UNIT
2. FULL TRACK ERASE HEAD
3. SUPPLY TAPE GUIDE
4. SUPPLY LOADING LEADER
5. END SENSOR
6. MAIN PCB
7. VIF UNIT
8. TENSION ARM
9. DETECT PCB
10. SUPPLY REEL TABLE
11. REC SAFETY SWITCH
12. TAKE UP LOADING LEADER
13. IDLER PART
14. SENSOR LED
15. FLD (FLUORESCENT DISPLAY)
16. TAKE UP REEL TABLE
17. REVIEW ARM
18. START SENSOR
19. PULSE POWER TRANSFORMER
20. PINCH ROLLER
21. CAPSTAN MOTOR BLOCK
22. TAKE UP TAPE GUIDE
23. A/C (AUDIO, CONTROL & SIDE TRACK ERASE) HEAD
24. HEAD CLEANER BLOCK
25. CANAL PLUS PCB
26. VIDEO HEAD DRUM BLOCK
27. PRE AMP PCB
28. RF UNIT (ANTENNA BOOSTER/SPLITTER)

※The photograph on this page is of model VS-G435SEG

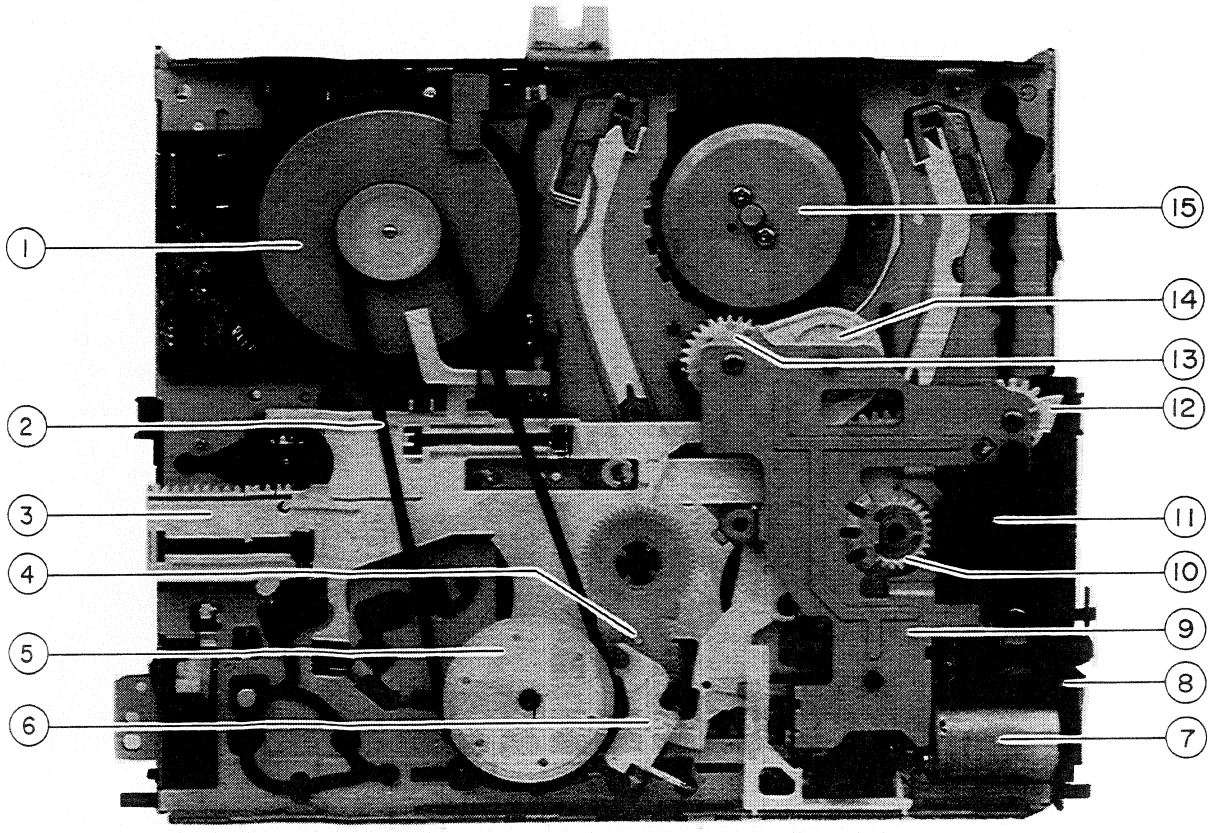


Fig. 2-2 Bottom view

1. CAPSTAN MOTOR BLOCK
2. CAPSTAN BELT
3. PINCH SLIDER
4. GEAR COUPLING BLOCK
5. CLUTCH DISK PART
6. COUPLING ARM
7. LOADING MOTOR
8. LM/MS PCB
9. LOADING DRIVE BLOCK
10. CAM SLIDER GEAR
11. MODE DETECT SWITCH
12. FRONT LOADING GEAR
13. TOGGLE (T) GEAR BLOCK
14. TOGGLE (S) GEAR BLOCK
15. DRUM MOTOR BLOCK

III. VIEWING THE OPERATION OF THE BOTTOM SIDE OF THE MECHANISM BLOCK

※ In case you want to check the operation of the bottom side of the mechanism block, proceed as follows.

3-1. REMOVAL OF THE FRONT PANEL

1) Remove the FRONT PANEL BLOCK (refer to step 1-2, on page 10).

3-2. REMOVAL OF THE MECHANISM BLOCK

1) Disconnect the connector on the FULL TRACK ERASE HEAD.

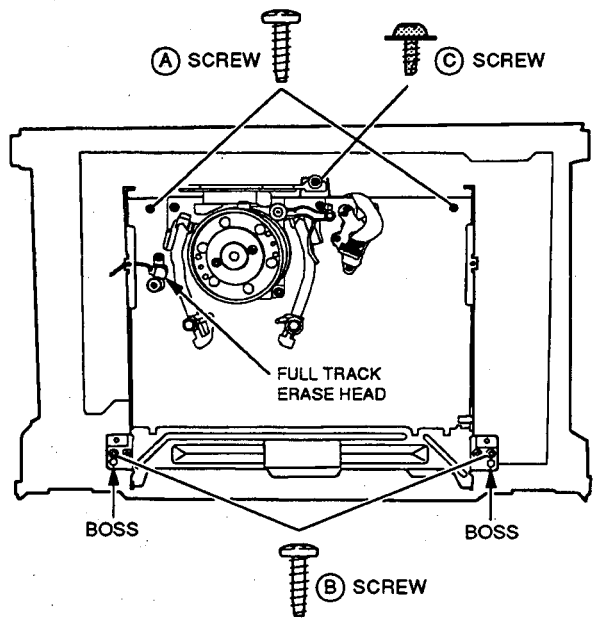


Fig. 3-1

2) Remove the two Ⓐ, Ⓑ screws and the Ⓒ screw as shown in Fig. 3-1.
3) Remove the MECHANISM BLOCK and place an insulated sheet (or any suitable insulated material) on the MAIN PCB.
4) Place the MECHANISM BLOCK on the insulated sheet etc., standing it on end as shown in Fig. 3-2 taking care not to damage the flat cable on the PRE AMP PCB.

III. VISUALISATION DE L'OPERATION DU FOND DU BLOC DE MECANISME

※ Si on veut vérifier l'opération du fond du bloc de mécanisme, procéder comme suit.

3-1. DEPOSE DU PANNEAU AVANT

1) Déposer LE BLOC DE PANNEAU AVANT (se référer à l'étape 1-2 à la page 10).

3-2. DEPOSE DU BLOC MECANISME

1) Déconnecter le connecteur sur la TETE D'EFFACEMENT DE PISTE INTEGRAL.

2) Retirer les deux vis Ⓐ et Ⓑ et la vis Ⓒ comme indiqué sur la Fig. 3-1.
3) Déposer le BLOC MECANISME et placer une feuille isolante (ou tout autre matériau isolant approprié) sur la PCB PRINCIPALE.
4) Placer le BLOC MECANISME sur la feuille isolante, etc. en le posant sur un bout comme indiqué sur la Fig. 3-2 et en prenant soin de ne pas endommager le câble plat sur la PCB PREAMPLI.

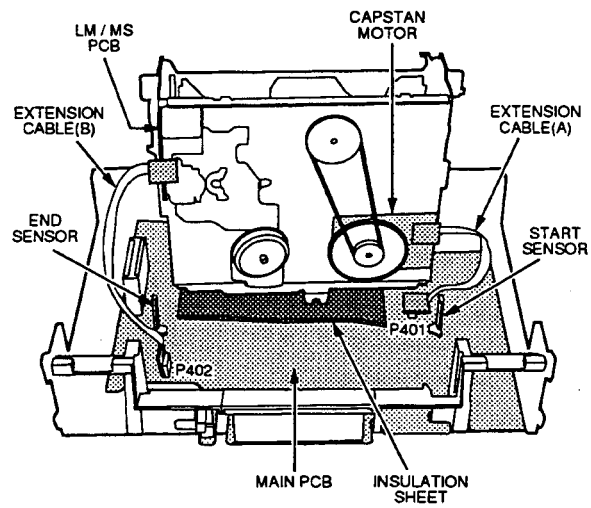


Fig. 3-2

3-3. CONNECTING THE EXTENSION CABLES

1) Connect the two extension cables (which are provided as the service jig) between the CAPSTAN MOTOR BLOCK and the P401 connector on the MAIN PCB, the LM/MS PCB and P402 connector on the MAIN PCB.

NOTE : The "front" mark on the extension cable (A)'s PCB must be facing front when connecting.

3-4. TURNING THE POWER ON

1) Place a cover (a ball point pen's cap etc.) on the start sensor, as shown in Fig. 3-2, in order to intercept the light to the sensor. The cover must be black or metal.
2) Engage the test mode (refer to information section, "PRESETS IN THE TEST MODE").
3) Remove the cover on the start sensor immediately after the cassette tape is inserted in the ejector. So the tape is drawn down automatically.
4) Cover both the start and end sensors at the same time with the covers just before the cassette tape reaches the lower position.
   Although the reel pulse is not generated, normal playback and CUE, REVIEW modes can be operated in this condition.
5) In case you want to change the tape, eject the present tape by pressing the "EJECT" button then remove the cover on the end sensor and repeat steps 3) to 4).

3-3. RACCORDEMENT DU CABLE DE RALLONGE

1) Raccorder les deux câbles de rallonge (qui sont fournis avec le gabarit de maintenance) entre le BLOC MOTEUR DU CABESTAN et le connecteur P401 sur la PCB PRINCIPALE, la PCB LM/MS et le connecteur P402 sur la PCB PRINCIPALE.

REMARQUE : Le repère "front" (avant) de la CARTE du câble de rallonge (A) doit se trouver face à l'avant lors du raccordement.

3-4. MISE SOUS TENSION

1) Placer un cache (capuchon d'un stylo à bille, etc.) sur le sensor de démarrage comme indiqué sur la Fig. 3-2 afin d'intercepter la lumière vers le sensor. Le capuchon doit être noir ou en métal.
2) Activer le dernier mode (se reporter à la section d'information "PREREGLAGES EN MODE TEST").
3) Retirer le cache sur le sensor de démarrage immédiatement après l'insertion de la cassette dans l'éjecteur de sorte que la cassette soit entraînée automatiquement.
4) Couvrir les deux sensors de démarrage et d'arrêt en même temps avec les caches juste avant que la cassette atteigne la position inférieure.
   Bien que l'impulsion de la bobine ne soit pas générée, la lecture normale et les modes de repérage (CUE) de relecture (REVIEW) peuvent être utilisés dans cette condition.
5) Au cas où on veut changer la cassette, éjecter la cassette actuelle en appuyant sur la touche d'éjection (EJECT), puis déposer le cache sur le sensor d'arrêt et répéter les étapes 3) à 4).

IV. DISASSEMBLY OF THE MAIN COMPONENTS

4-1. REMOVAL OF THE MECHANISM BLOCK

NOTE: Some parts in the mechanism block require complete removal of the mechanism block from the chassis when performing servicing.
Set the loading mechanism to the "EJECT" position by pressing the "EJECT" button, then disconnect the AC power plug from the AC socket before proceeding. This sets the loading mechanism to the "reference position".

4-1-1. Removal of the MECHANISM BLOCK.

1) Remove the FRONT PANEL BLOCK (refer to step 1-2 on page 10).
2) Disconnect the flat cable from the connector on the PRE AMP PCB. (P831 for models VS-G220, G225 and G235SEG, P801 for models VS-G420, G425 and G435SEG.)
3) Disconnect the connector on the FULL TRACK ERASE HEAD.
4) Disconnect the P1 connector on the A/C HEAD PCB.
5) Remove the two Ⓐ, Ⓑ screws and © screw as shown in Fig. 4-1.

IV. DEMONTAGE DES PRINCIPAUX COMPOSANTS

4-1. DEPOSE DU BLOC MECANISME

REMARQUE:
Certaines pièces du bloc de mécanisme nécessitent une dépose totale du bloc de mécanisme du châssis pour effectuer des réparations.
Régler le mécanisme de chargement sur la position d'éjection (EJECT) en appuyant sur la touche d'éjection (EJECT), puis débrancher la fiche d'alimentation secteur de la prise secteur avant de procéder. Cela met le mécanisme de chargement à la position de "référence".

4-1-1. Dépose du BLOC DE MECANISME

1) Déposer LE BLOC DE PANNEAU AVANT (se référer à l'étape 1-2 à la page 10).
2) Déconnecter le câble plat du connecteur sur la PCB PREAMPLI. (P831 pour les modèles VS-G220, G225 et G235SEG, P801 pour les modèles VS-G420, G425 et G435SEG.)
3) Déconnecter le connecteur sur la TETE D'EFFACEMENT DE PISTE INTEGRAL.
4) Déconnecter le connecteur P1 de la PCB TETE A/C.
5) Retirer les deux vis Ⓐ et Ⓑ et la vis © comme indiqué sur la Fig. 4-1.

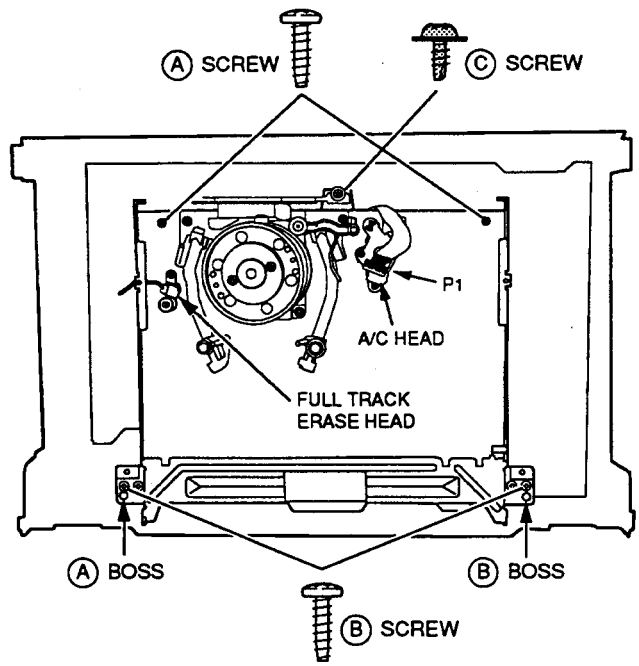


Fig. 4-1

6) Pull up the MECHANISM BLOCK carefully to detach it from the chassis and the MAIN PCB.

4-1-2. Installation of the MECHANISM BLOCK

1) Carefully align the Ⓐ and Ⓑ bosses on the chassis with their corresponding holes on the MECHANISM BLOCK and tighten the five screws (refer to Fig. 4-1).
2) Proceed in the reverse order for installation.

6) Soulever délicatement le BLOC MECANISME pour le détacher du châssis et de la PCB PRINCIPALE.

4-1-2. Installation du BLOC MECANISME

1) Aligner soigneusement les bosses Ⓐ et Ⓑ sur le châssis avec les trous correspondants du BLOC MECANISME et serrer les cinq vis (se référer à la Fig. 4-1).
2) Procéder dans l'ordre inverse pour l'installation.

4-2. REMOVAL OF THE PRE AMP PCB

1) Remove the MECHANISM BLOCK from the chassis (refer to step 4-1).
2) Remove the two Ⓐ screws, then press both the left and right end of the PRE AMP PCB backward (in the direction of the arrow) as shown in Fig. 4-2.

4-2. DEPOSE DE LA PCB PREAMPLI

1) Déposer le BLOC MECANISME du châssis (se référer à l'étape 4-1).
2) Retirer les deux vis Ⓐ, ensuite presser les deux bouts gauche et droit de la PCB PREAMPLI vers l'arrière (dans le sens de la flèche) comme indiqué sur la Fig. 4-2.

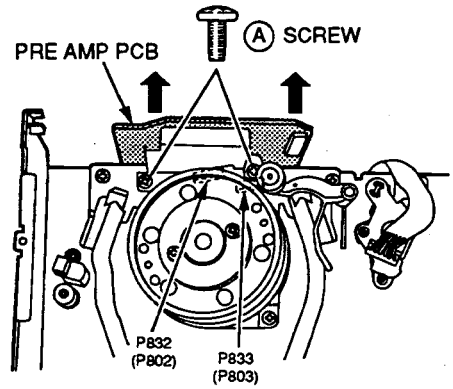


Fig. 4-2

3) Proceed in the reverse order for installation. Carefully align the connectors between the one on the DRUM MOTOR PCB, the one on the LOWER DRUM and P833 (or P803), P832 (P802) on the PRE AMP PCB.

3) Procéder en sens inverse pour l'installation. Aligner soigneusement les connecteurs entre celui de la PCB du MOTEUR DE TAMBOUR, et celui du TAMBOUR INFERIEUR et les connecteurs P833 (ou P803), P832 (ou P802) de la PCB DU PRE-AMPLI.

4-3. REMOVAL OF THE EJECTOR BLOCK

4-3-1. Removal of the CASSETTE LOAD BLOCK

1) Remove the two Ⓐ screws on the UPPER PLATE, as shown in Fig. 4-3 then remove the UPPER PLATE.

4-3. DEPOSE DU BLOC EJECTEUR

4-3-1. Dépose du BLOC DE CHARGEMENT DE CASSETTE

1) Retirer les deux vis Ⓐ de la PLAQUE SUPERIEURE comme indiqué sur la Fig. 4-3, puis déposer la PLAQUE SUPERIEURE.

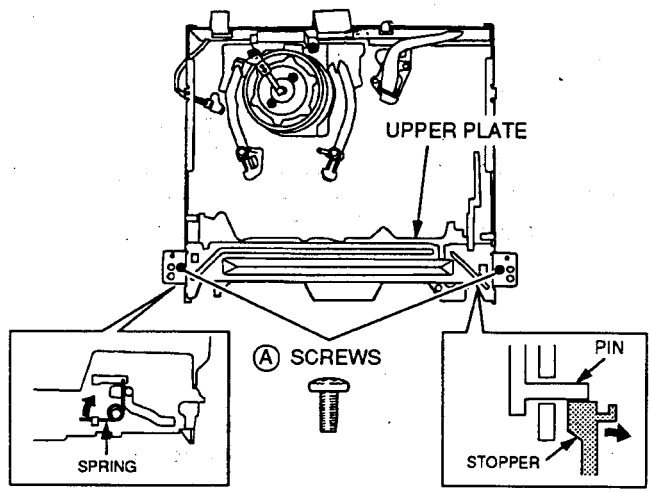


Fig. 4-3

2) Unhook the spring and remove it as shown in Fig. 4-3.
3) While pressing the right STOPPER in the direction of the arrow (refer to Fig. 4-3), gently remove the right side pin of the CASSETTE LOAD BLOCK from the rail by pulling it in the forward direction. Next, remove the left side pin in the same manner, then remove the CASSETTE LOAD BLOCK. To avoid damaging the

2) Décrocher le ressort et le retirer comme indiqué sur la Fig. 4-3.
3) Tout en appuyant sur l'ARRET droite dans le sens de la flèche (se reporter à la Fig. 4-3), retirer doucement la goupille latérale droite du BLOC DE CHARGEMENT DE CASSETTE du rail tout en le tirant en avant. Ensuite, retirer la goupille latérale gauche de la même

pins of the CASSETTE LOAD BLK and the rail of the MECHA. FRAME, do not use excessive force when removing the CASSETTE LOAD BLK.

4-3-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (refer to Fig. 4-4) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

manière; ensuite retirer le BLOC DE CHARGEMENT DE CASSETTE. Pour éviter d'endommager les goupilles du BLOC DE CHARGEMENT DE CASSETTE et le rail du CHASSIS DE MECANISME, ne pas utiliser une force excessive lors de la dépose du BLOC DE CHARGEMENT DE CASSETTE.

4-3-2. Dépose du BLOC DU BRAS DE CHARGEMENT

1) Déverrouiller l'arrêt sur le côté droit de l'axe du BLOC DU BRAS DE CHARGEMENT (se reporter à la Fig. 4-4) en appuyant sur la languette de l'arrêt avec un tournevis à tête plate (—). Ensuite, déposer l'extrémité droite de l'axe du support.

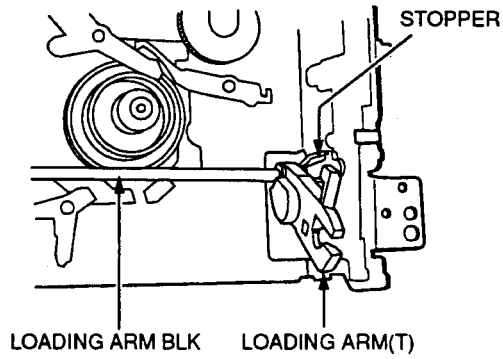


Fig. 4-4

2) Hold the LOADING ARM (T) and then pull out the shaft's left end from the bracket. Take special care when removing it to avoid damaging the pins (refer to Fig. 4-4).

4-3-3. Reassembling

1) Proceed in the reverse order of 4-3-1 to 4-3-2 for installation.

4-4. REMOVAL OF THE MODE DETECT SWITCH

Before proceeding with removal of the MODE DETECT SWITCH, the loading mechanism must be set to the "reference" position. If it has not already been set, use the following procedure to set the reference position.

※ Connect a 6V battery to the loading motor until both the cam slider gear and mode detect switch reach the reference position (refer to Fig. 4-6).

2) Tenir le BRAS DE CHARGEMENT (T) et extraire ensuite l'extrémité gauche de l'axe du support. Faire très attention lors de la dépose pour éviter d'endommager les goupilles (se reporter à la Fig. 4-4).

4-3-3. Réassemblage

1) Procéder dans l'ordre inverse de 4-3-1 à 4-3-2 pour l'installation.

4-4. DEPOSE DU COMMUTATEUR DE DETECTION DE MODE

Avant de procéder à la dépose du commutateur de détection de mode (MODE DETECT SWITCH), le mécanisme de chargement doit être réglé sur la position de "référence". S'il n'a pas encore été réglé, utiliser la procédure suivante pour régler la position de référence.

※ Connecter une batterie de 6 V au moteur de chargement jusqu'à ce que l'engrenage baladeur à cames et le commutateur de détection de mode atteignent la position de référence (se reporter à la Fig. 4-6).

4-4-1. Removal of the MODE DETECT SWITCH

1) Unsolder the 5 leads of the mode detect switch.

4-4-1. Dépose du commutateur de sélection de mode (MODE DETECT SWITCH)

1) Enlever la soudure des 5 conducteurs du commutateur de détection de mode.

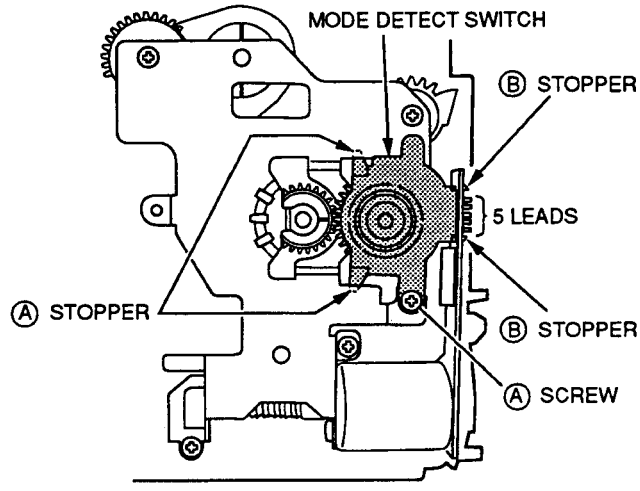


Fig. 4-5

2) Remove the Ⓐ screw.
3) While releasing the two Ⓐ stoppers and two Ⓑ stoppers, carefully remove the mode detect switch by pulling it up and to the left.

2) Retirer la vis Ⓐ.
3) Tout en déverrouillant les deux arrêts Ⓐ et les deux arrêts Ⓑ, déposer soigneusement le commutateur de détection de mode en le soulevant vers la gauche.

4-4-2. Installation of the MODE DETECT SWITCH

1) Install the mode detect switch in the reverse order of 4-4-1. When mounting the mode detect switch, align the mode detect switch's Ⓐ mark with the Ⓑ mark on the cam slider gear as shown in Fig. 4-6.

4-4-2. Installation du commutateur de détection de mode

1) Installer le commutateur de détection de mode dans l'ordre inverse de 4-4-1. Lors du montage du commutateur de détection de mode, aligner le repère Ⓐ du commutateur de détection de mode avec le repère Ⓑ sur l'engrenage baladeur à cames comme indiqué sur la Fig. 4-6.

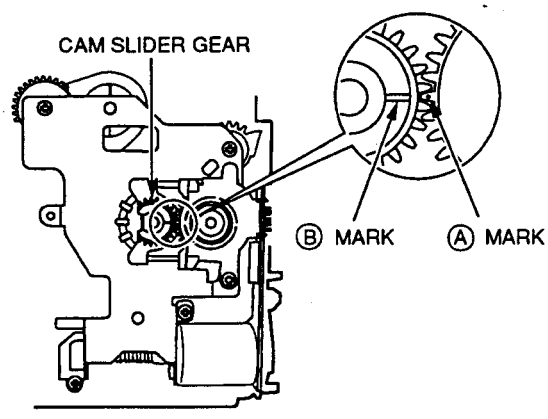


Fig. 4-6

4-5. DISASSEMBLY OF THE LOADING DRIVE BLOCK

※ Set the loading mechanism to the "reference" position. Refer to 4-4, "REMOVAL OF THE MODE DETECT SWITCH" before proceeding.

4-5-1. Removal of the LOADING DRIVE BLOCK

1) Remove the MODE DETECT SWITCH (refer to 4-4-1 "removal of the MODE DETECT SWITCH") if necessary.
2) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws then remove the LOADING DRIVE BLOCK as shown in Fig. 4-7.

4-5. DEMONTAGE DU BLOC DE COMMANDE DE CHARGEMENT

※ Régler le mécanisme de chargement sur la position de "référence".
Se reporter à la section 4-4 "DEPOSE DU COMMUTATEUR DE DETECTION DE MODE" avant de procéder.

4-5-1. Dépose du BLOC DE COMMANDE DE CHARGEMENT

1) Retirer le commutateur de détection de mode (MODE DETECT SWITCH) (se reporter à la section 4-4-1 " Dépose du commutateur de détection de mode (MODE DETECT SWITCH)", si nécessaire.
2) Retirer les vis Ⓐ, Ⓑ, Ⓒ et Ⓓ, puis déposer le BLOC DE COMMANDE DE CHARGEMENT comme indiqué sure la Fig. 4-7.

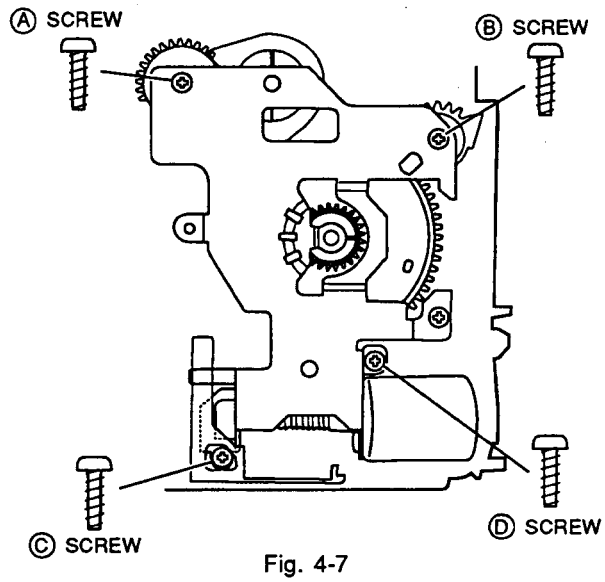


Fig. 4-7

4-5-2. Replacement of the LOADING MOTOR

1) Remove the LOADING DRIVE BLOCK (refer to 4-5-1)
2) Unsolder the two leads of the LOADING MOTOR.
3) Remove the two installation screws.

4-5-2. Remplacement du MOTEUR DE CHARGEMENT

1) Déposer le BLOC DE COMMANDE DE CHARGEMENT (se reporter à la section 4-5-1).
2) Enlever la soudure des deux conducteurs du MOTEUR DE CHARGEMENT.
3) Retirer les deux vis d'installation.

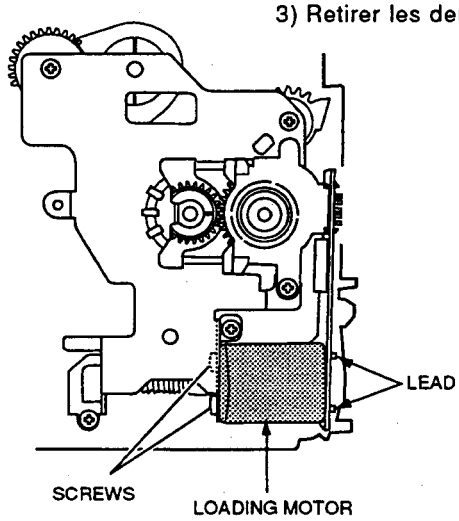


Fig. 4-8

4) Reassemble in the reverse order for installation.

4) Réassembler dans l'ordre inverse pour l'installation.

4-6. REASSEMBLY OF THE LOADING MECHANISM BLK

4-6-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEARs (T) and (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 4-9.

4-6. REASSEMBLAGE DU BLOC DE MECANISME DE CHARGEMENT

4-6-1. Position des ENGRENAGES A BASCULE (T) et (S)

1) Régler les ENGRENAGES A BASCULE (T) et (S) sur la position de déchargement avec les doigts. Aligner le repère Ⓐ sur l'ENGRENAGE A BASCULE (S) avec le trou Ⓐ de l'ENGRENAGE A BASCULE (T) comme indiqué sur la Fig. 4-9.

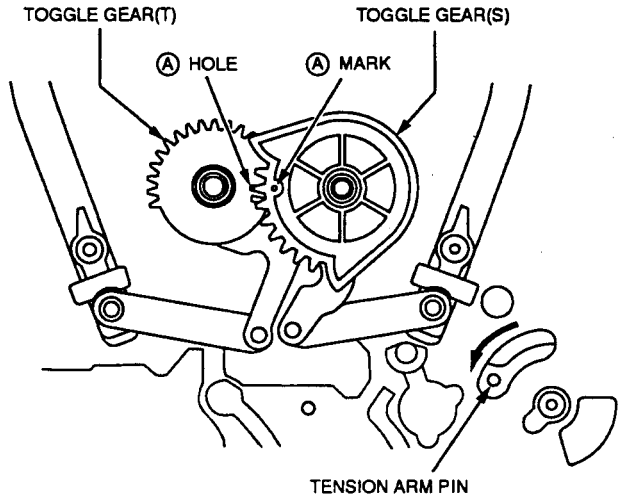


Fig. 4-9

NOTE : When positioning the TOGGLE GEAR (S), the TENSION ARM's pin should be moved in the direction of the arrow before placing the TOGGLE GEAR (S) onto its shaft.

REMARQUE :
Lors du positionnement de l'ENGRENAGE A BASCULE (S), la goupille du BRAS DE TENSION doit être retirée dans le sens de la flèche avant de placer l'ENGRENAGE A BASCULE (S) sur son axe.

4-6-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 4-10.

4-6-2. Installation de l'ENGRENAGE BALADEUR A CAMES & de l'ENGRENAGE DE CHARGEMENT FRONTAL

1) Fixer l'ENGRENAGE A VIS SANS FIN comme indiqué sur la Fig. 4-10.

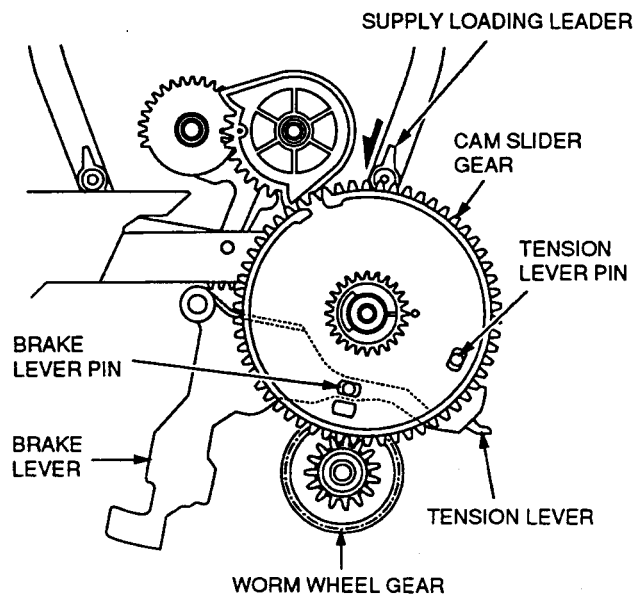


Fig. 4-10

2) Place the CAM SLIDER GEAR on the shaft and adjust the position of the BRAKE LEVER and TENSION LEVER so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig. 4-10. When inserting the CAM SLIDER GEAR onto its shaft, press the SUPPLY LOADING GEAR slightly in the direction of the arrow to make installation easy.
3) Attach the FRONT LOADING GEAR so that the Ⓐ mark on the FRONT LOADING GEAR aligns with the Ⓑ mark on the FRONT LOADING SLIDER and that the Ⓒ mark on the FRONT LOADING GEAR aligns with the Ⓓ mark on the CAM SLIDER GEAR as shown in Fig. 4-11.

2) Placer l'ENGRENAGE BALADEUR A CAMES sur l'axe et ajuster la position du LEVIER DE FREINAGE et du LEVIER DE TENSION de sorte que les deux goupilles apparaissent à travers les trous sur l'ENGRENAGE BALADEUR A CAMES comme indiqué sue la Fig.4-10. Lors de l'insertion de l'ENGRENAGE BALADEUR A CAMES sur son axe, appuyer légèrement sur l'ENGRENAGE DE CHARGEMENT D'ALIMENTATION dans le sens de la flèche pour faciliter l'installation.
3) Fixer l'ENGRENAGE DE CHARGEMENT FRONTAL de sorte que le repère Ⓐ sur l'ENGRENAGE DE CHARGEMENT FRONTAL s'aligne avec le repère Ⓑ sur le COULISSEAU DE CHARGEMENT FRONTAL et que le repère Ⓒ sur l'ENGRENAGE DE CHARGEMENT FRONTAL s'aligne avec le repère Ⓓ sur le l'ENGRENAGE BALADEUR A CAMES comme indiqué sur la Fig. 4-11.

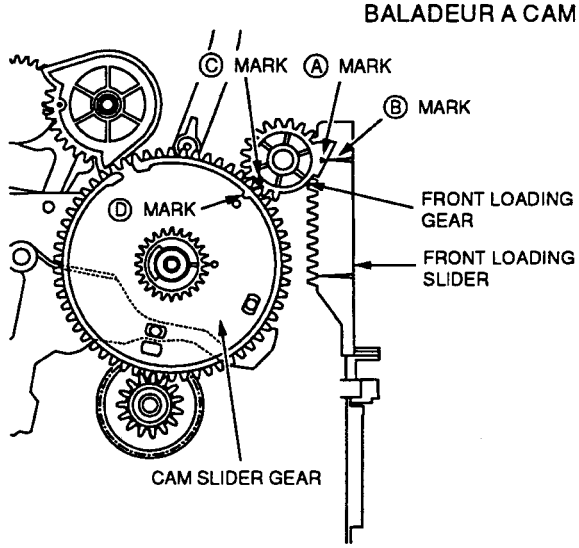


Fig. 4-11

4-6-3. Installation of the LOADING BLOCK & MODE DETECT SWITCH

1) Install the LOADING DRIVE BLOCK as shown in Fig. 4-12. Align the Ⓐ mark on the MODE DETECT SWITCH's gear with the Ⓑ mark on the CAM SLIDER GEAR when installing. (Refer to 4-4-2, "Installation of the MODE DETECT SWITCH".)

4-6-3. Installation du BLOC DE CHARGEMENT & du commutateur de détection de mode

1) Installer le BLOC DE COMMANDE DE CHARGEMENT comme indiqué sue la Fig. 4-12. Aligner le repère Ⓐ sur l'engrenage du commutateur de détection de mode (MODE DETECT SWITCH) avec le repère Ⓑ sur l'ENGRENAGE BALADEUR A CAMES lors de l'installation. (Se reporter à la section 4-4-2, "Installation du commutateur de détection de mode".

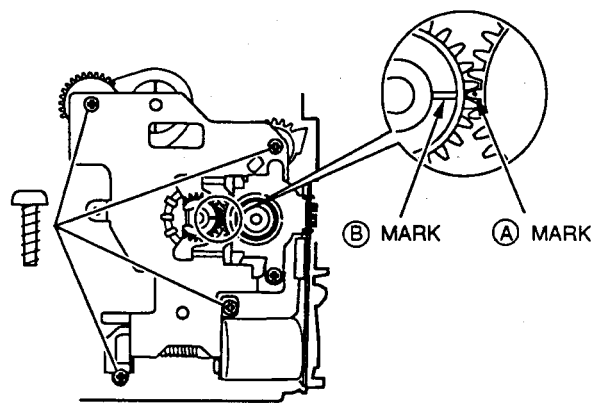


Fig. 4-12

4-7. REPLACEMENT OF THE DISK CLUTCH BLOCK & GEAR COUPLING BLOCK

1) Remove the SLIT WASHER as shown in Fig. 4-13.

4-7. REMPLACEMENT DU BLOC D'EMBRAYAGE DE DISQUE &DU BLOC DE COUPLAGE D'ENGRENAGE

1) Retirer la RONDELLE FENDUE comme indiqué sur la Fig. 4-13.

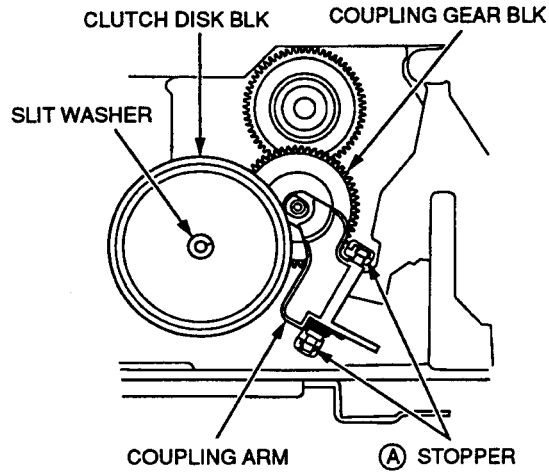


Fig. 4-13

2) Release the two Ⓐ stoppers of the COUPLING ARM and pull up the CLUTCH DISK BLOCK and COUPLING GEAR BLOCK at the same time.
3) Reassemble in the reverse order for installation.

2) Déverrouiller les deux arrêts Ⓐ sur le BRAS DE COUPLAGE et soulever le BLOC DE DISQUE D'EMBRAYAGE et le BLOC D'ENGRENAGE DE COUPLAGE en même temps.
3) Réassembler dans l'ordre inverse pour l'installation.

4-8. REPLACEMENT OF THE REVIEW BRAKE PART & IDLER PART

4-8-1. Replacement of the REVIEW BRAKE PART

1) Un hook the Ⓐ spring, then release the stopper of the REVIEW BRAKE PART and remove it.

4-8. REMPLACEMENT DE LA PIECE DE FREIN DE RELECTURE & DE L'ENGRENAGE INTERMEDIAIRE

4-8-1. Remplacement de la PIECE DE FREIN DE RELECTURE

1) Décrocher le ressort Ⓐ, puis déverrouiller l'arrêt de la PIECE DE FREIN DE RELECTURE et la déposer.

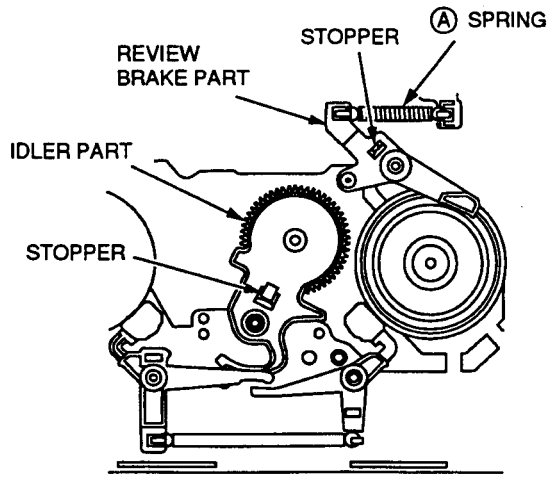


Fig. 4-14

2) Reassemble in the reverse order for installation.

2) Réassembler dans l'ordre inverse pour l'installation.

4-8-2. Replacement of the IDLER PART

1) Remove the CASSETTE LOAD BLOCK & LOADING ARM BLOCK. (Refer to 4-3, "Removal of the EJECTOR BLOCK".)
2) Release the stopper of the IDLER PART and remove it as shown in Fig. 4-14.
3) Reassemble in the reverse order for installation.

4-9. REPLACEMENT OF THE PINCH ROLLER BLOCK

1) Remove the Ⓐ spring, then remove the PINCH ROLLER ARM BLOCK by turning it in the direction of the arrow and pulling it upward as shown in Fig. 4-15.

4-8-2. Remplacement de l'ENGRENAGE INTERMEDIAIRE

1) Déposer le BLOC DE CHARGEMENT DE CASSETTE & le BLOC DU BRAS DE CHARGEMENT. (Se reporter à la section 4-3. "Dépose du bloc EJECTEUR").
2) Déverrouiller l'arrêt de ENGRENAGE INTERMEDIAIRE et le déposer comme indiqué sur la Fig. 4-14.
3) Réassembler dans l'ordre inverse pour l'installation.

4-9. REMPLACEMENT DU BLOC DE GALET PRESSEUR

1) Enlever le ressort Ⓐ, puis enlever le BLOC DU BRAS DU ROULEAU ENTRAINEUR en la tournant de la flèche et en le tirant vers le haut comme indiqué dans la Fig. 4-15.

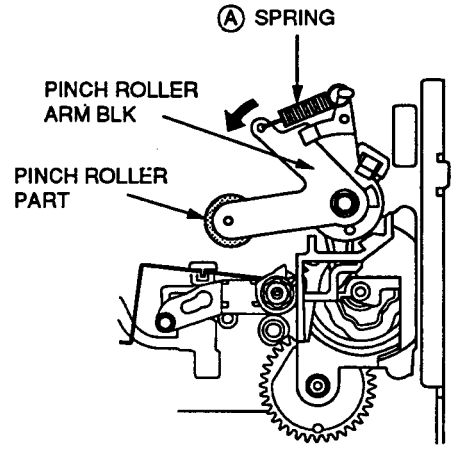


Fig. 4-15

2) Reassemble in the reverse order for installation.

2) Réassembler dans l'ordre inverse pour l'installation.

4-10. DISASSEMBLY OF THE PINCH LEVER & PINCH HOLDER

4-10-1. Removal of the PINCH LEVER and PINCH HOLDER

1) Remove the two Ⓐ screws then remove the PINCH LEVER and PINCH HOLDER.

4-10. DEMONTAGE DU LEVIER ET DU SUPPORT DU GALET PRESSEUR

4-10-1. Dépose du LEVIER DE GALET PRESSEUR et du SUPPORT DE GALET PRESSEUR

1) Retirer les deux vis Ⓐ, puis déposer le LEVIER DE GALET PRESSEUR et le SUPPORT DE GALET PRESSEUR.

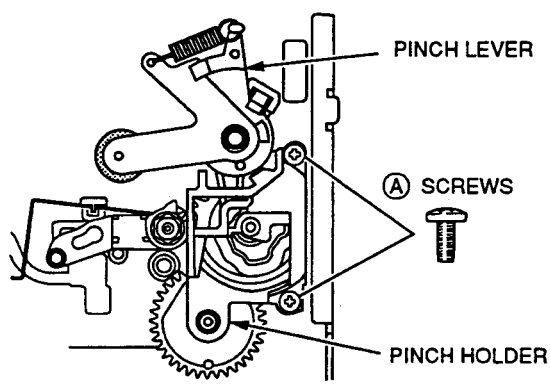


Fig. 4-16

4-10-2. Installation of the PINCH LEVER and PINCH HOLDER

1) Align the Ⓐ hole on the PINCH SLIDER with the Ⓐ mark on the PINCH GEAR through the hole on the chassis as shown in Fig. 4-17.

4-10-2. Installation du LEVIER DE GALET PRESSEUR et du SUPPORT DE GALET PRESSEUR

1) Aligner le trou Ⓐ sur le COULISSEAU DE GALET PRESSEUR avec le repère Ⓐ sur l'ENGRENAGE DE GALET PRESSEUR, à travers le trou sur le châssis comme indiqué sur la Fig. 4-17.

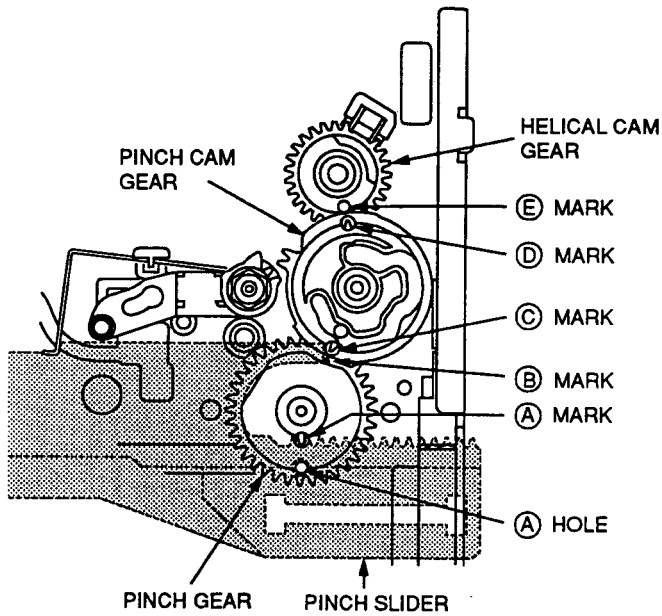


Fig. 4-17

2) Align the Ⓑ mark on the PINCH GEAR with the Ⓒ mark on the PINCH CAM GEAR and the Ⓓ mark on the PINCH CAM GEAR with the Ⓔ mark on the HELICAL CAM GEAR as shown in Fig. 4-17.
3) Install the PINCH LEVER and PINCH HOLDER in the reverse order.

2) Aligner le repère Ⓑ sur l'ENGRENAGE DE GALET PRESSEUR avec le repère Ⓒ sur l'ENGRENAGE A CAMES DU GALET PRESSEUR et le repère Ⓓ sur l'ENGRENAGE A CAMES DU GALET PRESSEUR avec le repère Ⓔ sur l'ENGRENAGE A CAMES HELICOIDAL comme indiqué sur la Fig. 4-17.
3) Installer le LEVIER ENTRAINEUR et le SUPPORT ENTRAINEUR dans l'ordre inverse.

4-11. REPLACEMENT OF THE CAPSTAN MOTOR BLOCK

1) Remove the three Ⓐ screws as shown in Fig.4-18.

4-11. REMPLACEMENT DU BLOC MOTEUR DU CABESTAN

1) Retirer les trois vis Ⓐ comme indiqué sue la Fig. 4-18.

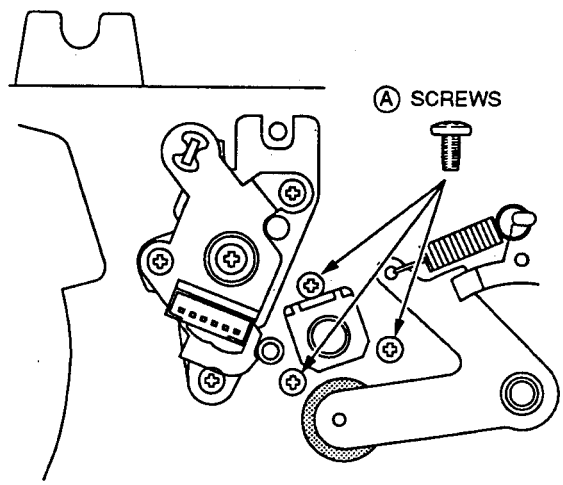


Fig. 4-18

2) Remove the CAPSTAN BELT.
3) Remove the Ⓑ screw and then remove the CAPSTAN MOTOR HOLDER.

2) Déposer la COURROIE DE CABESTAN.
3) Retirer la vis Ⓑ et puis déposer le SUPPORT DU MOTEUR DE CABESTAN.

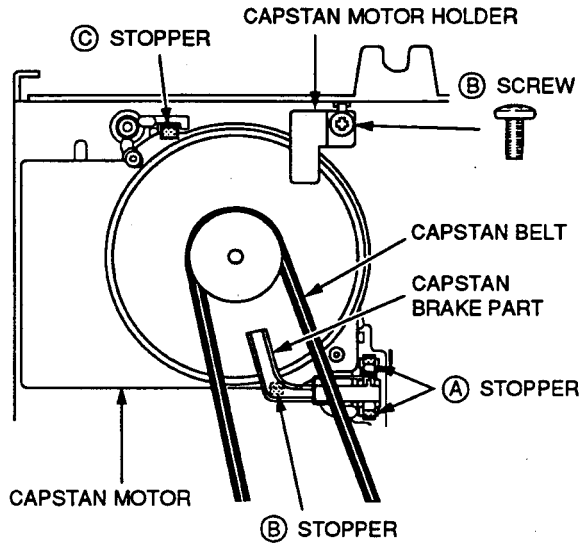


Fig. 4-19

4) Release the two Ⓐ stoppers and remove the CAPSTAN BRAKE PART.
5) Remove the CAPSTAN MOTOR BLOCK while releasing the Ⓑ and Ⓒ stoppers.
6) Proceed in the reverse order for installation.

4) Relâcher les deux arrêts Ⓐ et déposer la PARTIE DE FREIN DU CABESTAN.
5) Déposer le BLOC MOTEUR DU CABESTAN tout en déverrouillant les arrêts Ⓑ et Ⓒ.
6) Procéder dans l'ordre inverse pour l'installation.

4-12. DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and then remove it.
(If the PRE AMP PCB is not removed yet, remove it first before removing the Ⓐ screws. Refer to 4-2, "REMOVAL OF THE PRE AMP PCB".)

4-12. REMPLACEMENT DE LA CARTE PCB DU MOTEUR DU TAMBOUR

1) Retirer les deux vis Ⓐ de la PLAQUE TOURNANTE et la déposer ensuite.
(Si la carte PCB DU PRE-AMPLI n'est pas encore déposée, la déposer d'abord avant de retirer les vis Ⓐ. Se reporter à la section 4-2, "DEPOSE DE LA PCB PREAMPLI".

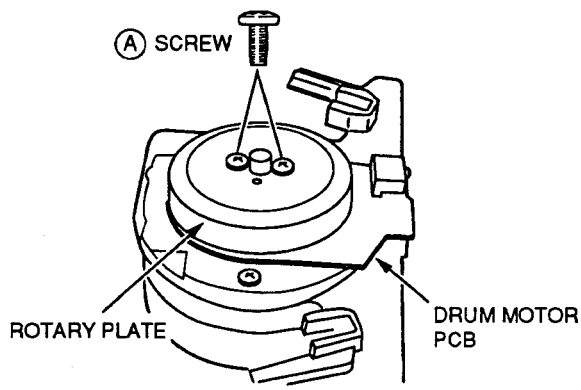


Fig. 4-20

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace it.

2) Retirer les trois vis Ⓑ qui fixent la PCB DU MOTEUR DE TAMBOUR et le remplacer.

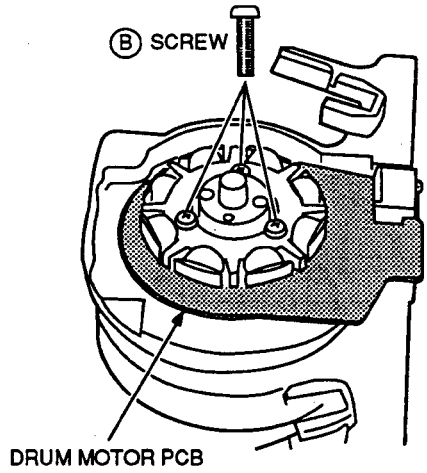


Fig. 4-21

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole line up.

3) Fixer la PLAQUE TOURNANTE au collet de précharge de façon à ce que le trou de la plaque tournante Ⓒ et le trou du collet de précharge Ⓓsoient alignés.

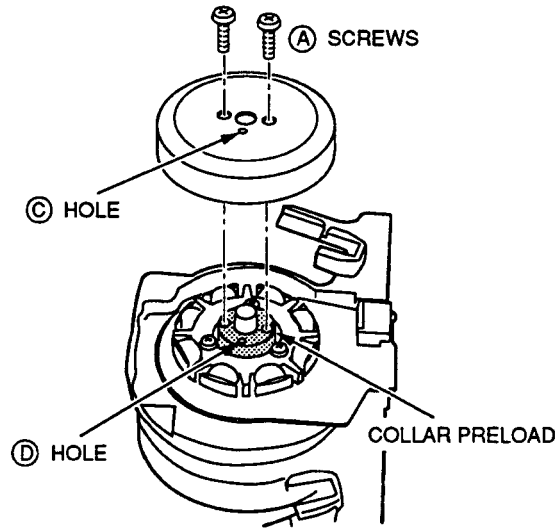


Fig. 4-22

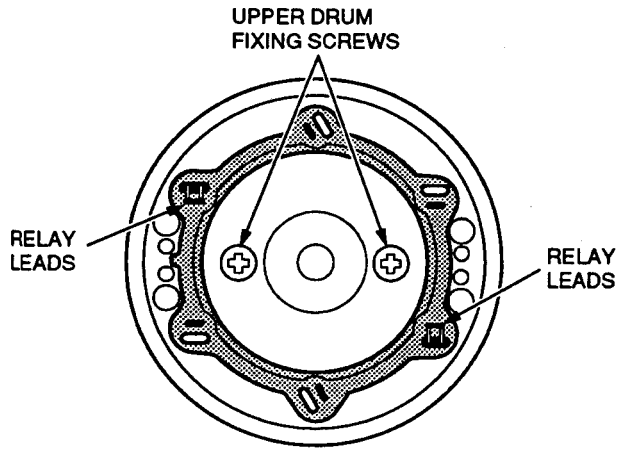
4) After replacement, PB switching point adjustment (INFORMATION, PRESET IN THE TEST MODE, #3) is absolutely necessary for the proper performance.

4) Après le remplacement, le réglage du point de commutation de lecture (PB) (INFORMATION, PREREGLAGE EN MODE TEST, #3) est absolument nécessaire pour obtenir une performance correcte.

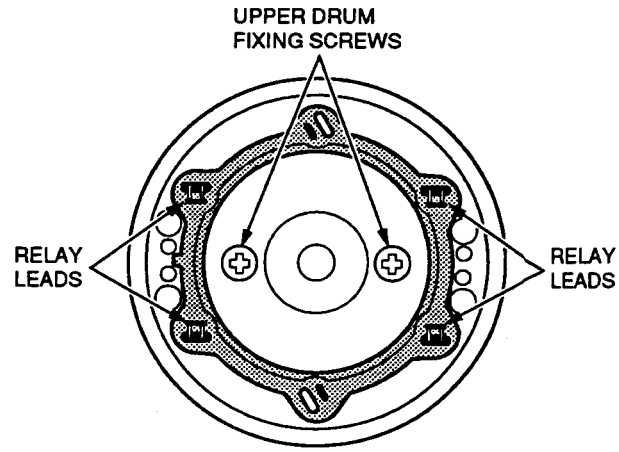
4-13. REPLACEMENT OF THE UPPER DRUM

4-13-1. Removal of the UPPER DRUM

1) Unsolder the relay leads and remove the two upper drum fixing screws as shown in Fig. 4-23. (Four relay leads for 2 head model and eight for 4 head model)



[For models G220, G225 & G235SEG]



[For models G420, G425 & G435SEG]

Fig. 4-23

2) Gently lift and remove the UPPER DRUM.

4-13-2. Installation of the UPPER DRUM

[For 2 head models]

Attach the UPPER DRUM to the LOWER DRUM ROTOR so that the upper drum convex Ⓐ and lower drum rotor's white PCB line up as shown in Fig. 4-24.

4-13. REMPLACEMENT DU TAMBOUR SUPERIEUR (UPPER DRUM)

4-13-1. Dépose du tambour supérieur (UPPER DRUM)

1) Dessouder les huit câbtes de relais et déposer les deux vis de fixation du tambour supérieur comme montré à la Fig. 4-23. (Quatre conducteurs relais pour le modèle à 2 têtes et huit conducteurs de relais pour le modèle à 4 têtes.)

2) Soulever doucement le TAMBOUR SUPERIEUR et le déposer.

4-13-2. Pose du tambour supérieur (UPPER DRUM)

[Pour les modèles à 2 têtes].

Fixer le TAMBOUR SUPERIEUR au ROTOR DE TAMBOUR INFERIEUR de façon à ce que la partie convexe Ⓐ du tambour supérieur et la carte de circuits imprimés blanche du rotor de tambour inférieur soient alignées comme indiqué sur la Fig. 4-24.

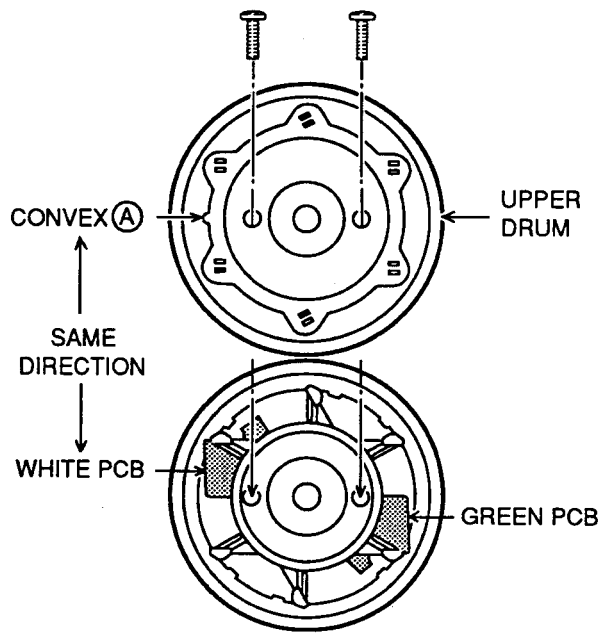


Fig. 4-24

[For 4 head models]
Attach the UPPER DRUM to the LOWER DRUM ROTOR so that the upper drum convex Ⓐ and lower drum rotor's white mark line up as shown in Fig. 4-25.

[Pour les modèles à 4 têtes]
Fixer le TAMBOUR SUPERIEUR au ROTOR DE TAMBOUR INFERIEUR de façon à ce que la partie convexe Ⓐ du tambour supérieur et le repère blanc soient alignés comme indiqué sur la Fig. 4-25.

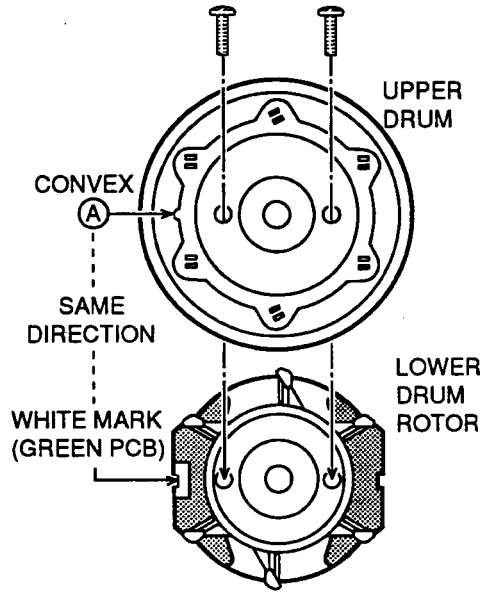


Fig. 4-25

NOTE : Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes, on the rotary transformer part, and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually.

REMARQUE : Du fait que la hauteur doit être réglée avec une grande précision pour que l'appareil fonctionne correctement et du fait que le bout des têtes est fragile, observer les points suivant lors du remplacement du bloc de tambour supérieur (UPPER DRUM BLOCK)

(a) Ne pas desserrer la vis de précharge du collier.
(b) Avant de poser, nettoyer les surfaces de contact du tambour supérieur et du transformateur rotatif avec de l'alcool.
(c) Si lors de l'installation le tambour supérieur ne peut pas glisser facilement sur l'axe, nettoyer l'orifice du tambour supérieur avec de l'alcool et appliquer un peu d'huile sur l'axe.
(d) S'assurer que les trous de vis de fixation sur le tambour supérieur sur le transformateur rotatif coïncident parfaitement avant d'introduire les vis.
(e) Serrer chacune des deux vis de fixation du tambour supérieur alternativement et progressivement.

4-13-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.
1) Control head phase adjustment. (V. MECHANICAL ADJUSTMENT 5-3-3.)
2) PB switching point adjustment. (INFORMATION, PRESET IN THE TEST MODE, #3.)
3) ENV. DET (I.HQ) adjustment. (INFORMATION, PRESET IN THE TEST MODE, #4.)
4) Video head REC current adjustment. (VI. ELECTRICAL ADJUSTMENT step 7.)

4-13-3. Après le remplacement

Après le remplacement, il est nécessaire d'effectuer les réglages suivants pour que l'appareil fonctionne correctement.
1) Réglage de la phase de tête de commande. (V. REGLAGES MECANIQUES 5-3-3)
2) Réglage du point de commutation de lecture (PB). (INFORMATION, PREREGLAGE EN MODE TEST #3.)
3) Réglage de détection d'enveloppe (ENV. DET (I.HQ). (INFORMATION, PREREGLAGE EN MODE TEST #4.)
4) Réglage de courant de la tête vidéo d'enregistrement (REC). (VI. REGLAGE ELECTRIQUE étape 7.)

4-14. REMOVAL OF THE MAIN PCB

1) Remove the FRONT PANEL BLOCK (refer to step 1-2 on page 10).
2) Remove the MECHANISM BLOCK (refer to step 4-1 on page 15).
3) Remove the VIF HOLDER on the VIF UNIT by pulling it up as shown in Fig. 4-26.

4-14. DEPOSE DE LA PCB PRINCIPALE

1) Déposer le BLOC DE PANNEAU AVANT (se reporter à 1-2 à la page 10).
2) Déposer le BLOC MECHANISME (se reporter à 4-1 à la page 15).
3) Déposer le SUPPORT VIF sur l'UNITE VIF en le soulevant comme indiqué sur la Fig. 4-26.

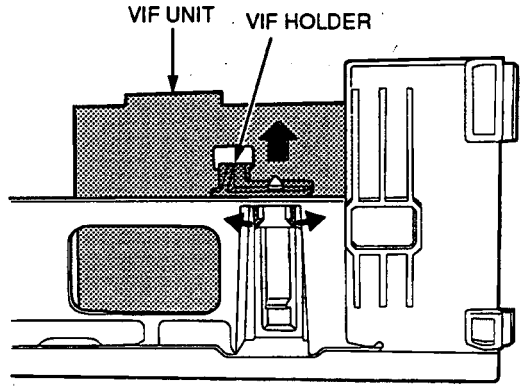


Fig. 4-26

4) Remove the three MAIN PCB retaining screws.

4) Retirer les trois vis de fixation de la PCB PRINCIPALE.

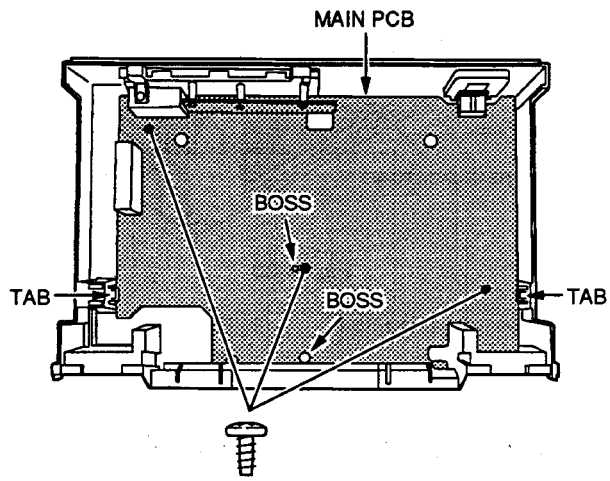


Fig. 4-27

5) Remove the DETECT PCB by pulling it up in the forward direction.

5) Déposer la PCB DE DETECTION en la soulevant en avant.

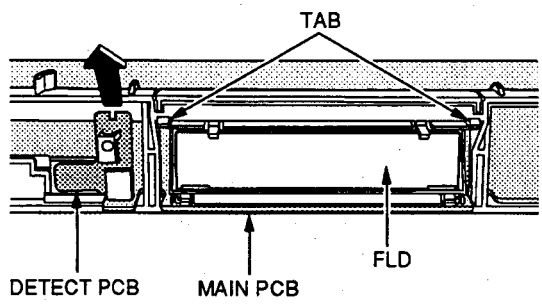


Fig. 4-28

6) While releasing the two tabs, press the upper part of the FLD carefully until the FLD is at a 60° angle.
7) In order to release the stopper of the AC INLET, press the protruding part of the AC INLET with your left thumb nail while holding the chassis (upper part of the AC INLET) with your right fingers as shown in Fig. 4-29.

6) Tout en relâchant les deux languettes, appuyer sur la partie supérieure de l'affichage fluorescent (FLD) jusqu'à ce que l'affichage fluorescent (FLD) soit à un angle de 60°.
7) Afin de libérer la butée de l'ENTREE SECTEUR, appuyer sur la partie saillante de l'ENTREE SECTEUR avec l'ongle de votre doigt gauche tout en tenant le châssis (la partie supérieure de l'ENTREE SECTEUR) avec vos doigts droits comme indiqué sur la Fig. 4-29.

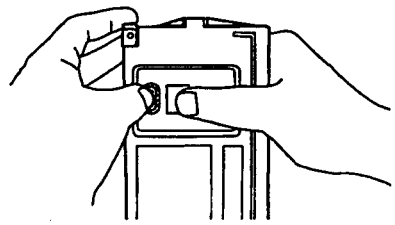


Fig. 4-29

8) Lift up the REAR JACK PANEL by pressing the stopper in the direction of the arrow as shown in Fig. 4-30.

8) Soulever le PANNEAU DE PRISE ARRIERE en pressant la butée dans le sens de la flèche comme indiqué sur la Fig. 4-30.

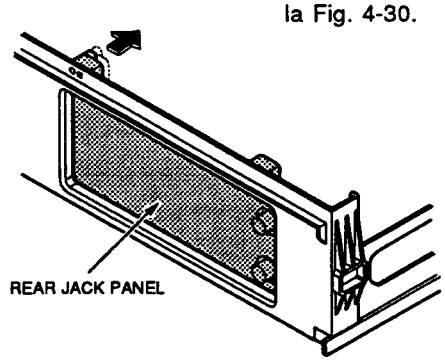


Fig. 4-30

9) Carefully remove the MAIN PCB while releasing the two tabs as shown in Fig. 4-27.

9) Déposer soigneusement la PCB PRINCIPALE tout en relâchant les deux languettes comme indiqué sur la Fig. 4-27.

4-15. REMOVAL OF THE CANAL PLUS PCB

4-15-1. Removal of the REAR JACK PANEL

1) Remove the MAIN PCB from the chassis (refer to step 4-14).
2) Remove the five Ⓐ screws on the CANAL PLUS PCB and the Ⓑ screw on the RF UNIT as shown in Fig. 4-31.

4-15. DEPOSE DE LA PCB CANAL PLUS

4-15-1. Dépose du PANNEAU DE PRISES ARRIERE

1) Déposer la PCB PRINCIPALE du châssis (se référer à l'étape 4-14).
2) Déposer les cinq vis A de la PCB CANAL PLUS et la vis B de l'UNITE FR comme indiqué sur la Fig. 4-31 .

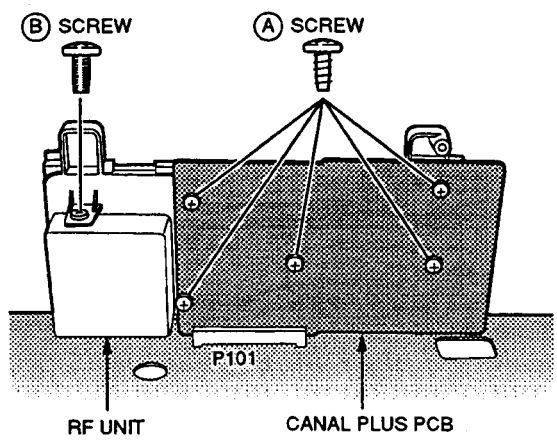


Fig. 4-31

3) Remove the REAR JACK PANEL by pulling it backwards while pressing the HOOK on the reverse side of the MAIN PCB downward as shown in Fig. 4-32.

3) Déposer le PANNEAU DE PRISES ARRIERE en le tirant en arrière tout en enfonçant le CROCHET sur la face inverse de la PCB PRINCIPALE vers le bas comme indiqué sur la Fig. 4-32.

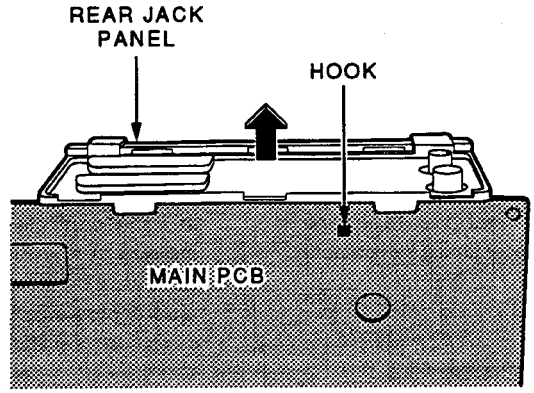


Fig. 4-32

4-15-2. Removal of the CANAL PLUS PCB

1) Carefully press the left, lower part of the CANAL PLUS PCB backward to detach it from the P101 connector on the MAIN PCB as shown in Fig. 4-31.
2) Re-assemble in the reverse order for installation.

4-15-2. Dépose de la PCB CANAL PLUS

1) Enfoncer délicatement la partie inférieure gauche de la PCB CANAL PLUS vers l'arrière afin de la détacher du conneteur P101 de la PCB PRINCIPALE comme indiqué sur la Fig. 4-31.
2) Réassembler dans l'ordre inverse pour l'installation.

V. MECHANICAL ADJUSTMENT

5-1. BACK TENSION ADJUSTMENT

1) Prepare a video cassette tape which you no longer need. Remove both tape reels and the tape protection cover from the cassette tape. Next, cover the video cassette's left and right detection holes with black adhesive tape.
2) Engage the playback mode using with a tapeless tape.
3) Confirm the distance between the three marks (lines) on the TENSION ARM and the Ⓐ mark on the MECHA. CHASSIS so that the Ⓐ mark aligns with the center line on the TENSION ARM as shown in Fig. 5-1.
4) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until a satisfactory result is achieved.

V. REGLAGE MECANIQUE

5-1. REGLAGE DE TENSION

1) Préparer une cassette vidéo qui n'est plus utilisée. Retirer les bobines de la bande et le capot de protection de la cassette. Ensuite, couvrir les trous de détection gauche et droite de la cassette vidéo avec un ruban adhésif noir.
2) Activer le mode de lecture en utilisant une cassette sans bande.
3) Vérifier la distance entre les trois repères (lignes) sur le BRAS DE TENSION et le repère Ⓐ sur le CHASSIS MECHA. de façon à ce que le repère Ⓐ s'aligne avec la ligne centrale sur le BRAS DE TENSION comme indiqué sue la Fig. 5-1.
4) Si le résultat n'est pas satisfaisant, éjecter la bande et ajuster plusieurs fois le REGLAGE DE TENSION jusqu'à ce qu'un résultat satisfaisant soit obtenu.

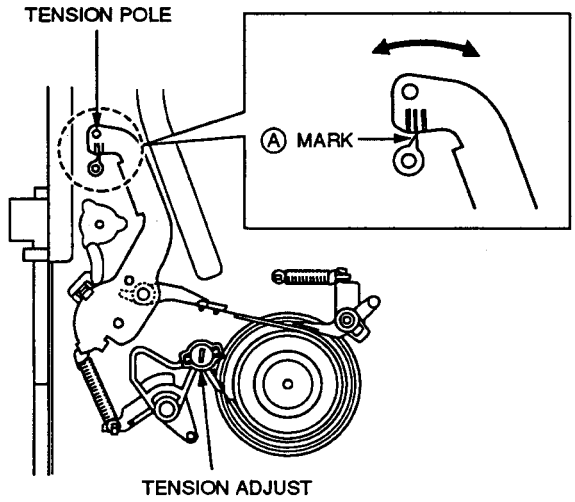


Fig. 5-1

5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE : The following adjustments are required only when an irregularity is found, since these adjustments are precisely set at the factory.

5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK, until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle.

5-2. REGLAGES DU TRANSPORT DE LA BANDE

REMARQUE : Les réglages suivants ne doivent être effectués que si une irrégularité est détectée du fait qu'il sont réalisés avec précision en usine.

5-2-1. Réglage de l'enroulement de la bande côté guide d'enroulement (TAKE UP TAPE GUIDE)

1) Lire une bande enregistrée inutilisée.
2) Tourner la vis Ⓐ sur le bloc de tête (A/C HEAD BLK) jusqu'à ce que le bord de la bande touche à peine la partie inférieure du guide d'enroulement (TAKE UP TAPE GUIDE) sans aucun pli ou ondulation.

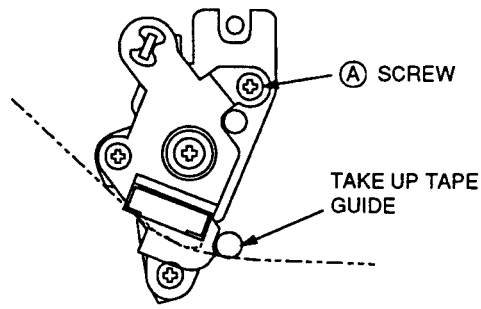
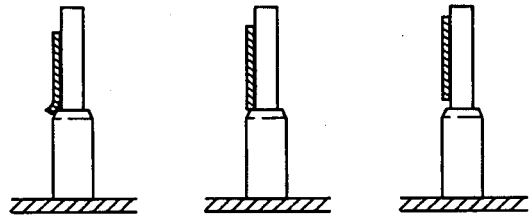


Fig. 5-2

(TAKE-UP TAPE GUIDE)



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-3

3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 4-3. A/C HEAD POSITION ADJUSTMENT.)

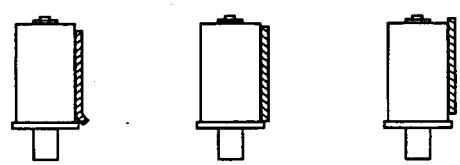
5-2-2. Tape curl adjustment at the SUPPLY TAPE GUIDE

Confirm that the lower edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE, without any curl or wrinkle as shown in Fig. 5-4a. If necessary, bend the neck part of the TENSION ARM in the Ⓐ or Ⓑ direction slightly until a satisfactory result is achieved.

3) Une fois que le réglage de la vis Ⓐ a été effecuté, il est nécessaire de régler l'azimut et la hauteur. (Se reporter à 4-3 REGLAGE DE LA POSITION DE TETE A/C)

5-2-2. Réglage de l'enroulement de bande au GUIDE D'ALIMENTATION DE BANDE

Confirmer que le bord inférieur de la bande touche à peine la partie inférieure du GUIDE D'ALIMENTATION DE BANDE, sans enroulement ou pli comme indiqué sur la Fig. 5-4a. Si nécessaire, plier légèrement le col du BRAS DE TENSION dans la direction Ⓐ ou Ⓑ jusqu'à ce qu'un résultat satisfaisant soit obtenu.



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-4a

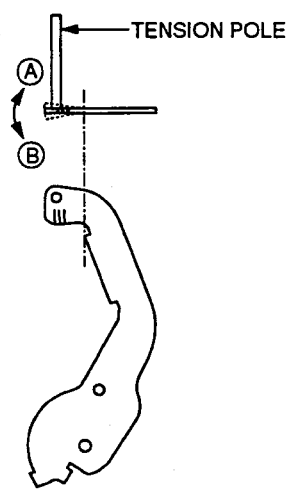
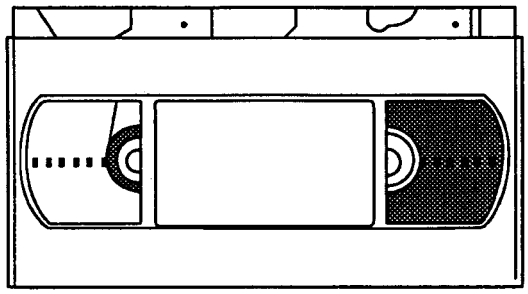


Fig. 5-4b

5-2-3. REVIEW ARM height adjustment

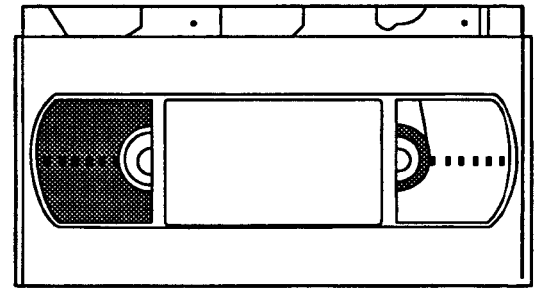
1) Play back the last part of an E-300 tape and set the unit to the REVIEW mode by pressing the REW button. (Remove the tape protection cover to make the adjustment easier.)



(REVIEW mode)

5-2-3. Reglage de la hauteur du bras de rembobinage (REVIEW ARM)

1) Reproduire la dernière partie d'une cassette E-300 et placer l'appareil en mode REVIEW en appuyant sur la touche de rembobinage (REW). (Déposer le couvercle de protection de bande pour faciliter le réglage.)



(CUE mode)

Fig. 5-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE, without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig. 5-6 to Fig. 5-8.

2) Tourner l'écrou Ⓐ de réglage de la hauteur du bras de rembobinage (REVIEW ARM) de manière que le bord de la bande touche à peine la partie inférieure du guide d'enroulement (TAKE UP TAPE GUIDE) sans aucun pli ou ondulation entre ce dernier et l'axe de cabestan, comme montré aux Fig. 5-6 à 5-8.

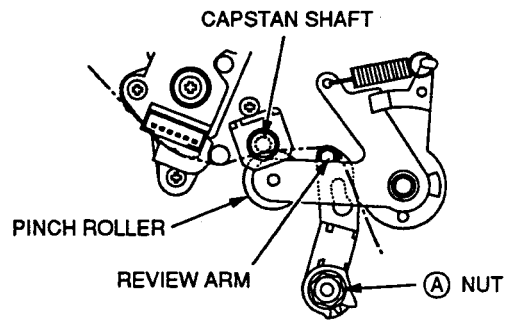
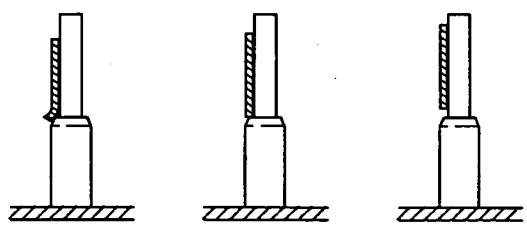


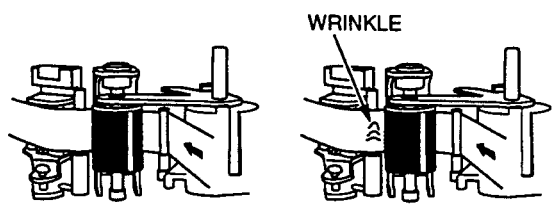
Fig. 5-6

(TAKE-UP TAPE GUIDE)



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-7



CORRECT INCORRECT

Fig. 5-8

3) Play back the beginning part of an E-300 tape and this time set the unit to the CUE mode by pressing the F. FWD button.
4) Confirm there is no curl or wrinkle near the REVIEW ARM's guide. If curl or wrinkle of the tape occurs, slightly turn the Ⓐ nut (Shown in Fig. 5-6) until it disappears.

3) Reproduire la première partie d'une cassette E-300 et placer cette fois-ci l'appareil en mode CUE en appuyant sur la touche d'avance rapide (F. FWD).
4) Confirmer qu'il n'y a pas d'enroulement ou de pli près du guide du BRAS DE RELECTURE. Si la bande est enroulée ou pliée, tourner légèrement l'écrou Ⓐ (indiqué sur la Fig. 5-6) jusqu'à ce que la bande devienne normale.

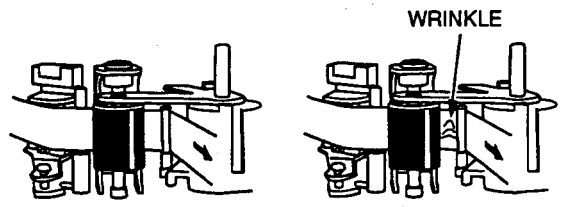


Fig. 5-9

5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)

5) Placer l'unité à nouveau en mode de relecture (REVIEW). Ensuite, confirmer qu'il n'y a pas d'enroulement ou de pli de bande près du GUIDE DE TENSION DE BANDE. (Un léger écartement peut apparaître après ce réglage, mais ceci est admissible.)

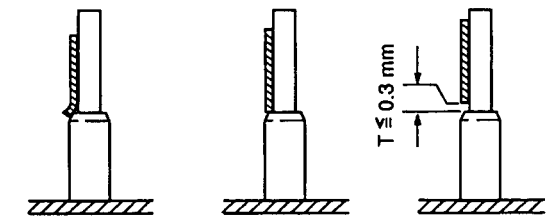


Fig. 5-10

NOTE :
1. If the results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-300 tape can be damaged easily, due of its thinness, a pre-adjustment with an E-180 tape is recommended.

REMARQUE:
1. Si les résultats ne sont pas satisfaisant répéter les opérations 2) à 5).
2. Toujours utiliser une bande qui ne soit pas abimées afin d'effectuer correctement les réglages.
3. Parce qu'une cassette E-300 peut être endommagée facilement, à cause de son faible épaisseur, un préréglage avec une cassette E-180 est recommandé.

5-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer to Fig. 5-11.)

5-2-4. Réglages de la hauteur des guides de chargement (LOADING LEADER)

1) Desserrer légèrement la vis de réglage à la partie inférieure des guides de chargement (LOADING LEADER) (L) et (R) afin que les guides puissent être ajustés avec un serrage suffisant. (Voir la Fig. 5-11)

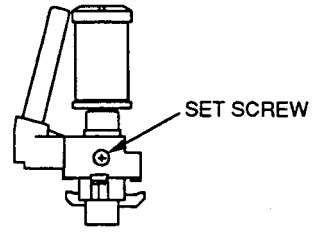


Fig. 5-11

2) Play back the reference tape TF-530RFS (Part No. : AT-751775).
3) Connect an oscilloscope's CH-1 to the TP831 or TP801 (ENVE) on the PRE AMP PCB and CH-2 to the TP832 or TP802 (V-SWP) for triggering.
4) Turn the LOADING LEADER heads with a flat head(–) screw driver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 5-12.
5) After adjustment is completed, tighten the loading leader set screws.

2) Lire la bande de référence TF-530RFS (No. de pièce : AT-751775).
3) Connecter le canal 1 (CH-1) d'un oscilloscope à la borne TP831 ou TP801 (ENVE) sur la PCB PREAMPLI et connecter le canal 2 (CH-2) à la borne TP832 ou TP802 (V-SWP) pour le déclenchement.
4) Tourner les têtes du GUIDE DE CHARGEMENT à l'aide d'un tournevis à tête plate pour obtenir une enveloppe FR plate comme enveloppe idéale, comme indiqué sur la Fig. 5-12.
5) Lorsque le réglage est terminé, serrer les vis de réglage du guide de chargement.

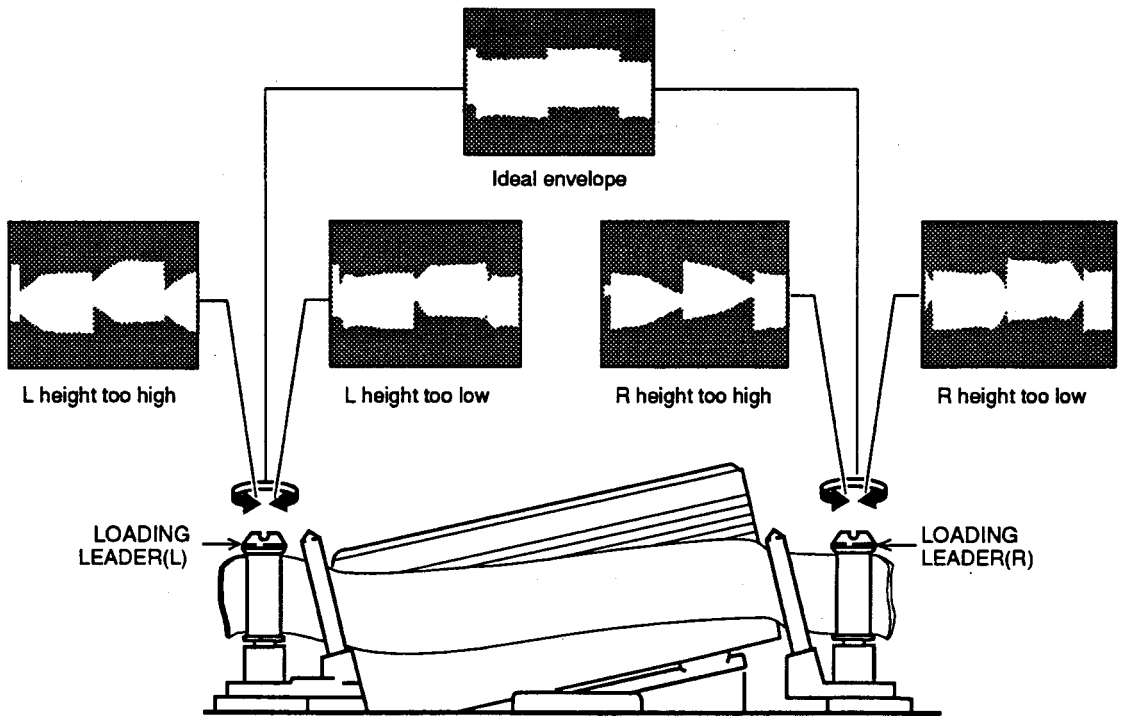


Fig. 5-12

5-3. A/C HEAD POSITION ADJUSTMENT

5-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (Part No. : AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output.

5-3. REGLAGE DE LA POSITION DES TETE A/C

5-3-1. Réglage d'azimut

1) Connecter un voltmètre CA ou un oscilloscope à la borne de sortie audio (AUDIO OUT) sur le panneau arrière.
2) Lire la bande de référence TF-530RFS (No. de pièce : AT-751775).
3) Réglar la vis Ⓑ de manière à obtenir la sortie audio optimale.

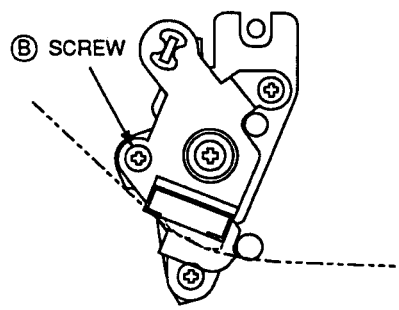


Fig. 5-13

5-3-2. Height adjustment

1) Play back test tape TF-526HH (Part No. : AT-751788).
2) Connect an oscilloscope to the AUDIO OUT terminal on the rear panel.
3) Slightly turn the © screw so that the output level is between 30~80 mVp-p.

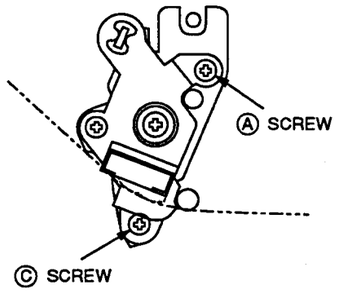


Fig. 5-14

4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig. 5-3.
5) Adjust the head azimuth again. (Turning the © screw, or Ⓐ screw, will cause head azimuth mis-alignment. Refer to 5-3-1. Azimuth adjustment.)
6) Confirm whether the output level is still between 30~80 mVp-p or not. If the result is not satisfactory, repeat steps 3) to 5).

5-3-3. Phase adjustment

1) Engage the "TEST MODE" (refer to "INFORMATION", PRESET IN THE TEST MODE #1).
2) Connect CH-1 of an oscilloscope to the TP831 or TP801 (ENVE) on the PRE AMP PCB and CH-2 to the TP832 or TP802 (V-SWP) for triggering.
3) Play back the reference tape TF-530RFS (Part No.: AT-751775). Check the seconds display of the FL display so that "1F" (centre position in the tracking range) is indicated at this point. If not indicated, press the"<" or ">" button on the remote control until "1F" is indicated.
4) Loosen the Ⓓ screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.

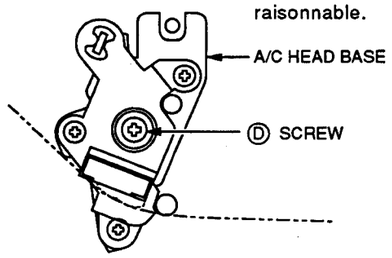


Fig. 5-15

5-3-2. Réglage de la hauteur

1) Lire la bande de référence TF-526HH (No. de pièce : AT-751788).
2) Connecter un oscilloscope à la borne de sortie audio (AUDIO OUT) sur le panneau arrière.
3) Tourner légèrement la vis © de telle sorte que le niveau de sortie se trouve entre 30 et 80 mVp-p.
4) Tourner légèrement la vis Ⓐ jusqu'à ce que le bord de la bande touche à peine la partie inférieure du GUIDE DE TENSION DE BANDE sans enroulement ou pli comme indiqué sue la Fig. 5-3.
5) Ajuster à nouveau l'azimut de la tête. (Le fait de tourner la vis © ou Ⓐ, provoque un mauvais alignement de l'azimut de la tête. Se reporter à la section 5-3-1 Réglage d'azimut.)
6) Confirmer que le niveau de sortie se trouve toujours entre 30 et 80 mVp-p ou pas. Si le résultat n'est pas satisfaisant, répéter les points 3) à 5).

5-3-3. Réglage de phase

1) Activer le "MODE TEST" (se référer à la section "INFORMATION" PREREGLAGE EN MODE TEST #1 et #3).
2) Connecter le canal 1 (CH-1) d'un oscilloscope à TP831 ou TP801 (ENVE) sur la PCB PREAMPLI et connecter le canal 2 (CH-2) au TP832 ou TP802 (V-SWP) pour le déclenchement.
3) Effectuer la lecture de la cassette de référence TF-530RFS (No. de pièce : AT-751775).
   Vérifier l'affichage des secondes de l'affichage fluorescent (FL) de sorte que "1" (position centrale de la plage d'alignement) soit indiqué à ce point. Si ce n'est pas le cas, appuyer sur la touche "<" ou ">" de la télécommande jusqu'à ce que "1F" apparaisse.
4) Desserrer légèrement la vis Ⓓ de sorte que la BASE DE TETE A/C puisse être déposée avec un serrage raisonnable.

5) Insert a philips type screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig. 5-16.

5) Insérer un tournevis à tête plate dans la BASE DE TETE A/C et le trou Ⓐ comme indiqué sue la Fig. 5-16.

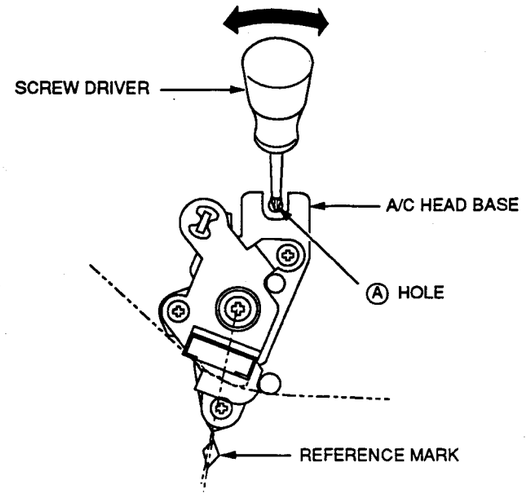


Fig. 5-16

6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig. 5-16 to obtain the maximum RF output, then tighten the Ⓓ screw. Although there are a few points at which the RF output becomes maximum, the pointed head of the A/C HEAD BASE must be positioned as close to the reference mark as possible.
7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activated. Next, press the "<" or ">" button on the remote control alternately and confirm that the RF output is maximum at the tracking centre position. If the result is not satisfactory, repeat the adjustment steps 2) to 6). (This adjustment is very important as this affects the interchangeability of the recorded tapes.)

6) Déplacer la BASE DE TETE A/C en tournant un tournevis dans le sens de la flèche comme indiqué sur la Fig. 5-16 pour obtenir la sortie RF maximum, ensuite serrer la vis Ⓓ. Bien qu'il y ait certains points sur lesquels la sortie RF atteint le maximum, la tête pointée de la BASE DE TETE A/C doit être positionnée aussi près que possible du repère de référence.
7) Ejecter la bande et ensuite la réinsérer et la relire. Confirmer que la tension de sortie FR est au maximum lorsque la commande d'alignement automatique a été activée. Ensuite, appuyer sur la touche de curseur "<" ou ">" de la télécommande et confirmer que la tension de sortie FR est au maximum à la position centrale d'alignement. Si le résultat n'est pas satisfaisant, répéter les étapes de réglage 2) à 6). (Ce réglage est très important, car il a un effet sur l'interchangeabilité des cassettes enregistrées.)

VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments
1. The colour bar generator output should be 1.0 Vp-p.
2. The VIDEO OUT terminal of the VCR should be terminated with 75 ohms (connect a dummy load or 75 ohms input TV).
3. If the IC601 (Y/C signal processor) on the MAIN PCB is replaced, adjustment (step 3 to 8) should be performed.
4. Calibrate the oscilloscope's vertical gain precisely and also adjust the oscilloscope's probe's trimmer properly so that the correct pulse response is obtained before proceeding to step 7.

STEP	ADJUSTMENT ITEM
1.	MODE and INPUT SIGNAL/TEST TAPE
2.	TEST POINT and ADJ part
3.	REMARKS (•) & RESULT (*)

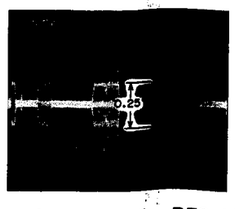
ADJ point →
Test point ⇢

6 PAL REC CURRENT (4 head models only)

1. "REC", PAL colour bar signal
2. P601 ⑬ pin (REC.CHROMA) & VR665 (PAL REC CHROMA)
3. • Connect CH-1 of an oscilloscope to P601 ⑬ pin and CH-2 to VIDEO OUT for triggering.
   * Adjust VR665 (REC-CHROMA) so that the burst level is 70 mVp-p.

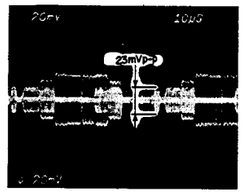
5 VIDEO REC CURRENT (2 head models only)

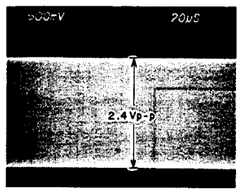
1. "REC", PAL colour bar signal
2. P601 ⑬ pin (REC.CHROMA), ⑮ pin (REC.Y) & VR665 (REC-CHROMA)
3. • Connect an oscilloscope's CH-2 to VIDEO OUT for triggering.
   • Connect CH-1 of the oscilloscope to P601 ⑮ pin and measure the REC Y level that corresponds to the H-SYNC period.
   • Next, connect CH-1 of the oscilloscope to P601 ⑬ pin.
   * Adjust VR665 (REC-CHROMA) so that the burst level is 25 % of the REC Y level.

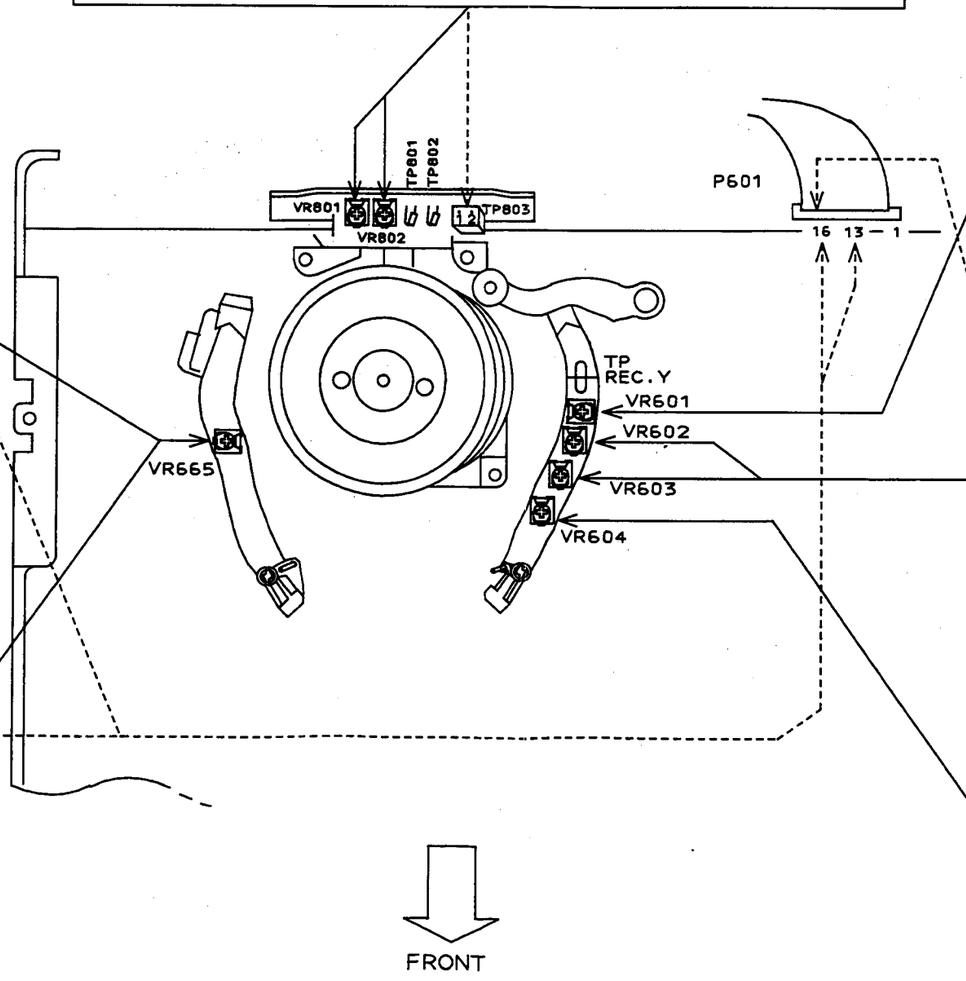


7 VIDEO REC CURRENT (4 head models only)

1. "REC" (LP mode), PAL colour bar signal
2. TP803 ①,② pin & VR801 (REC-CHROMA), VR802 (REC.Y)
3. • Connect CH-1 of an oscilloscope to TP803 ② pin on the PRE AMP PCB and CH-2 to ① pin. Set the oscilloscope's display mode to "ADD" mode and CH-2 polarity to "INVERTED". The CH-2 gain (VOLT/DIV.) must be the same as CH-1. If necessary, connect the "EXT.TRIGGER IN" terminal to VIDEO OUT for triggering.
   * Turn the VR802 fully counterclockwise then adjust VR801 so that the burst level is 23 mVp-p.
   • Next, disconnect the input colour bar signal and set the oscilloscope's display mode to "CH-1". (Remove the CH-2 probe from the TP803 ① pin.)
   * Adjust VR802 so that the Y REC current is 2.4 Vp-p.

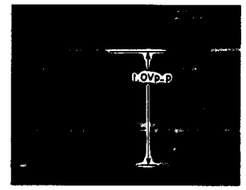






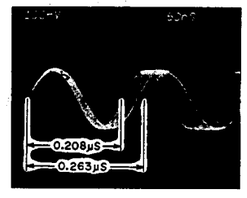
3 VIDEO E-E LEVEL

1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR601
3. • Connect an oscilloscope to VIDEO OUT.
   * 1.0 Vp-p



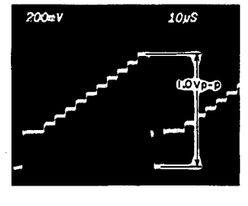
4 CARRIER SET & DEVIATION

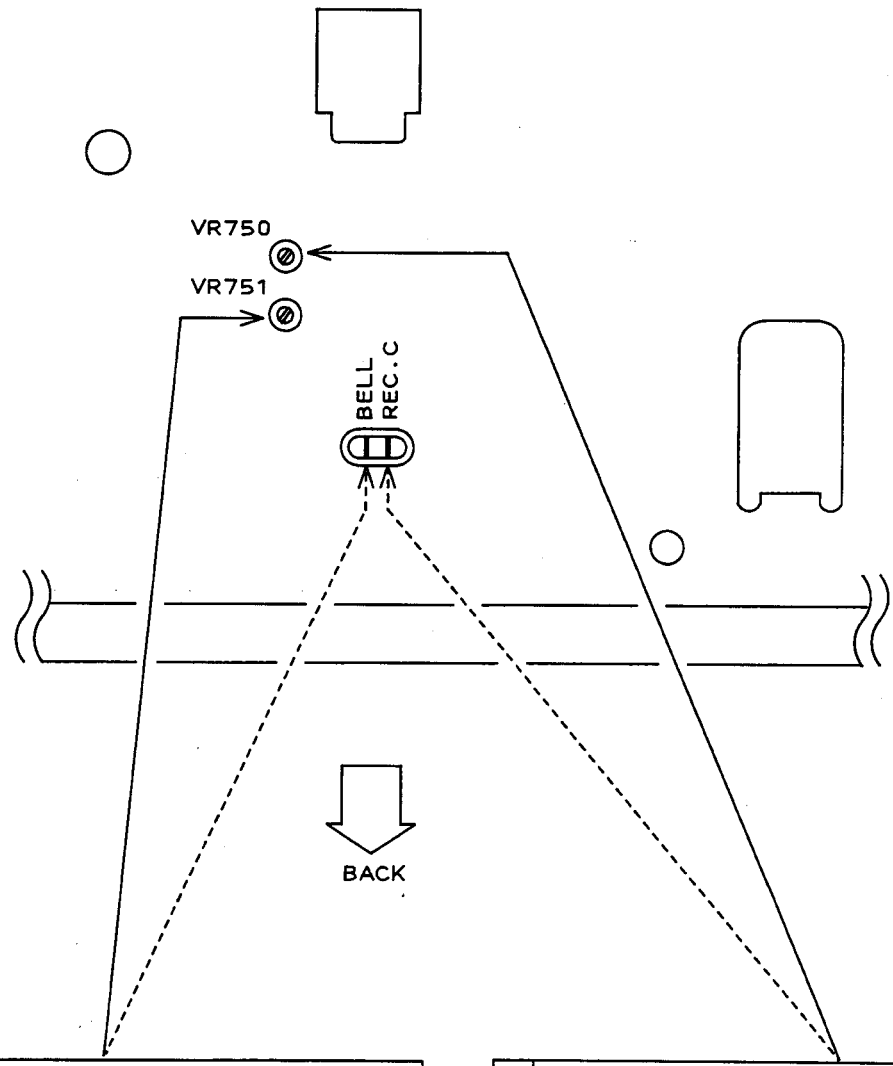
1. "REC", stair step signal
2. P601 ⑮ pin (REC.Y) or TP-REC.Y & VR602 (CARRIER), VR603 (DEVIATION)
3. • Connect an oscilloscope to P601 ⑮ pin (REC.Y) or TP-REC.Y on the MAIN PCB. Adjust VR602 and VR603 alternately until the result is satisfactory.
   * VR602 (CARRIER) : 0.263 µs (3.8 MHz)
   * VR603 (DEVIATION): 0.208 µs (4.8 MHz)



8 VIDEO PB LEVEL

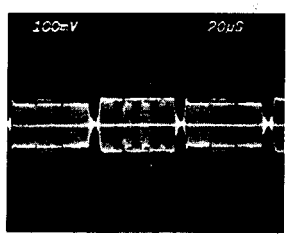
1. "REC"→ "PB", stair step signal
2. VIDEO OUT & VR604 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   • Make a recording on a blank tape, then play it back.
   * Adjust VR604 so that the PB level is 1.0 Vp-p.



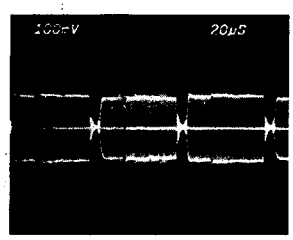


1	BELL FILTER

1. "E-E" (STOP mode), SECAM colour bar signal
2. TP-BELL & VR751 (BELL FILTER)
3. • Connect CH-1 of an oscilloscope to TP-BELL on the bottom side of the VCR and CH-2 to VIDEO OUT for triggering.
   * Adjust VR751 so that the waveform shape is as flat as possible during both of the B-Y and R-Y periods.



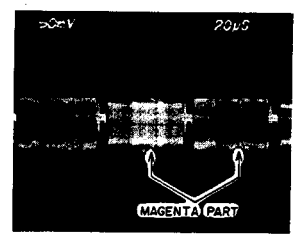
INCORRECT



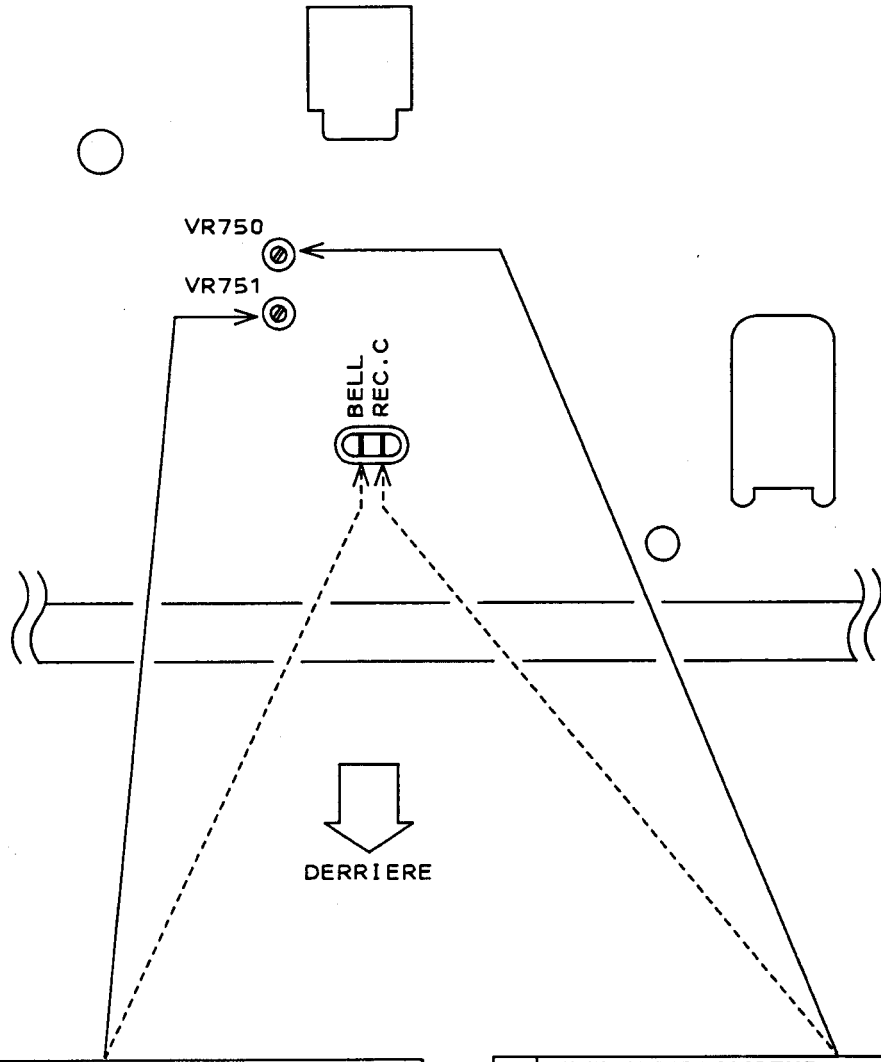
CORRECT

2	EQUALIZER LEVEL

1. "E-E" (STOP mode), SECAM colour bar signal
2. TP-REC.C & VR750 (EQ LEVEL)
3. • Connect CH-1 of an oscilloscope to TP-REC.C on the bottom side of the VCR and CH-2 to VIDEO OUT for triggering.
   * Adjust VR750 so that the magenta level between the B-Y and R-Y periods are equal.

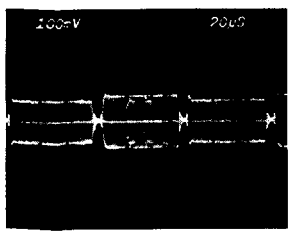


VI. REGLAGE ELECTRIQUE

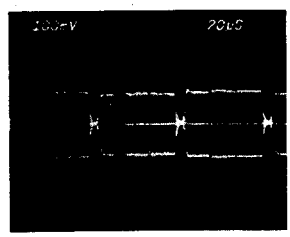


1 FILTRE BELL

1. "E-E" (mode d'ARRET), signal de barre de couleur SECAM.
2. TP-BELL & VR751 (FILTRE BELL)
3. • Connecter le canal 1 (CH-1) d'un oscilloscope au TP BELL au fond du comme magnétoscope et connecter le canal 2 (CH-2) à la sortie vidéo (VIDEO OUT) pour le déclenchement.
   * Ajuster VR751 de sorte que la forme d'onde soit aussi plate que possible pendant les deux périodes B-Y et R-Y.



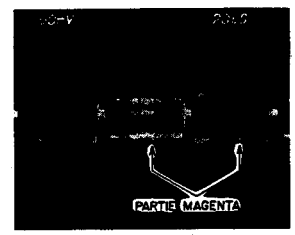
INCORRECT



CORRECT

2 NIVEAU D'EGALISEUR

1. "E-E" (mode d'ARRET), signal de barre de couleur SECAM.
2. TP-REC.C & VR750 (NIVEAU EQ)
3. • Connecter le canal 1 (CH-1) d'un oscilloscope au TP-REC.C au fond du magnétoscope et connecter le canal 2 (CH-2) à la sortie vidéo (VIDEO OUT) pour le déclenchement.
   * Ajuster VR750 de sorte que les niveaux magenta entre les deux périodes B-Y et R-Y soit égaux.



Précautions à prendre avant d'effectuer les réglages.

1. La tension de sortie du générateur à barres couleur doit être de 1,0 Vc-c.
2. La borne de sortie vidéo doit avoir une terminaison de 75 ohms (connecter une charge fictive ou une entrée TV de 75 ohms).
3. Si le CI601 (processeur de signal Y/C) de la PCB PRINCIPALE est remplacé, le réglage (étape 3 à 8) doit être effectué.
4. Calibrer le gain vertical de l'oscilloscope avec précision et ajuster également correctement le condensateur variable de la tête de l'oscilloscope de sorte que la réponse d'impulsion correcte soit obtenue avant de procéder à l'étape 7.

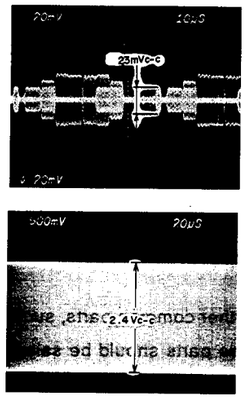
ETAPE	ELEMENT DE REGLAGE
1.	MODE et SIGNAL D'ENTREE/BANDE TEST
2.	POINT TEST et pièce AJUSTEE
3.	REMARQUES (•) & RESULTAT (✱)

à pieces de reglage

à point d'essai

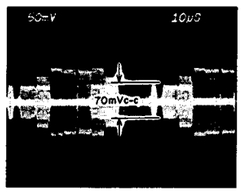
7 COURANT D'ENREGISTREMENT VIDEO (uniquement pour les modèles à 4 têtes)

1. "REC" (mode LP), signal de barre de couleur PAL.
2. TP803 ①, ② broches & VR801 (REC.CHROMA), VR802 (REC-Y)
3. • Connecter le canal 1 (CH-1) de l'oscilloscope à TP803 ② broches sur la PCB PREAMPLI et connecter le canal 2 (CH-2) à ① broche. Régler le mode d'affichage de l'oscilloscope en mode "ADD" et régler la polarité du canal 2 (CH-2) sur "INVERTED" (inversé). Le gain du canal 2 (CH-2) (VOLT/DIV) doit être le même que pour le canal 1 (CH-1). Si nécessaire, connecter la borne d'entrée du déclencheur externe (EXT. TRIGGER IN) à la sortie vidéo (VIDEO OUT) pour le déclenchement.
   ✱ Tourner VR802 complètement dans le sens contraire des aiguilles d'une montre, ensuite ajuster VR801 de sorte que le niveau des rafales soit de 23 mVc-c.
   • Ensuite, déconnecter le signal d'entrée de la barre de couleur et régler le mode d'affichage de l'oscilloscope sur le canal-1 ("CH-1"). (Déposer la sonde du canal-2 (CH-2) de TP803 à ① broche.)
   ✱ Ajuster VR802 de sorte que le courant Y REC soit égal à 2,4 Vc-c.



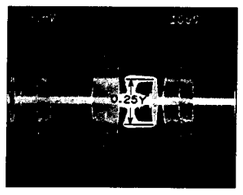
6 COURANT D'ENREGISTREMENT PAL (uniquement pour les modèles à 4 têtes)

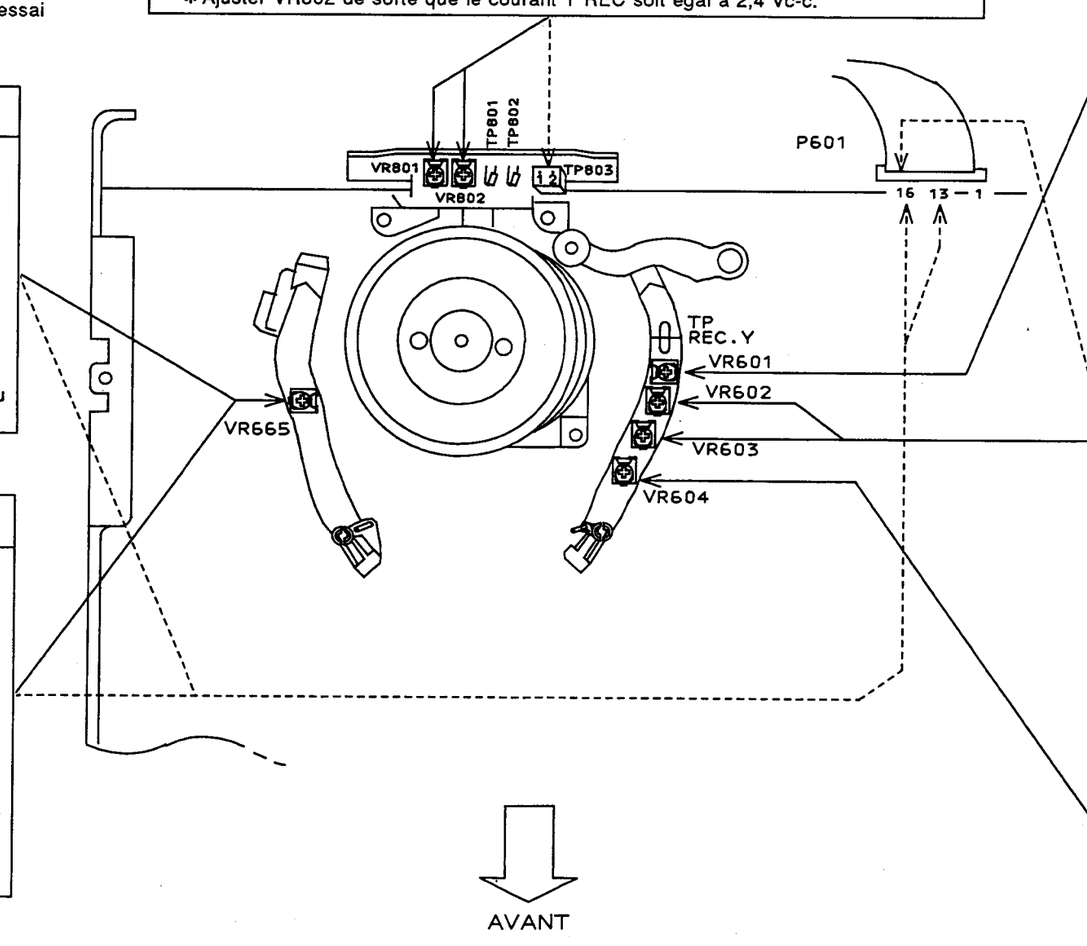
1. "REC", signal de barre de couleur PAL.
2. P601 ⑬ broches (REC. CHROMA) & VR665 (PAL REC CHROMA).
3. • Connecter le canal 1 (CH-1) de l'oscilloscope à P601 ⑬ broches et connecter le canal 2 (CH-2) à la sortie vidéo (VIDEO OUT) pour le déclenchement.
   ✱ Ajuster VR665 (REC-CHROMA) de sorte que le niveau des rafales soit de 70 mVc-c.



5 COURANT D'ENREGISTREMENT VIDEO (uniquement pour les modèles à 2 têtes)

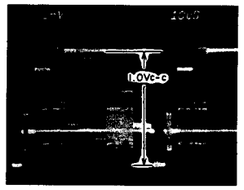
1. "REC", signal de barre de couleur PAL.
2. P601 ⑬ broches (REC. CHROMA), ⑯ broches (REC.Y) & VR665 (REC-CHROMA).
3. • Connecter le canal 1 (CH-1) de l'oscilloscope à P601 ⑯ broches et mesurer le niveau REC Y qui correspond à la période de synchronisation horizontale (H-SYNC).
   • Ensuite, connecter le canal 1 (CH-1) de l'oscilloscope à P601 ⑬ broches.
   ✱ Ajuster VR665 (REC-CHROMA) de sorte que le niveau des rafales soit de 25 % du niveau REC Y.





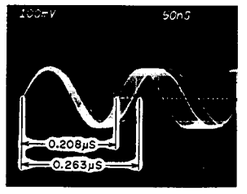
3 NIVEAU VIDEO E-E

1. "E-E" (mode d'arrêt), signal de la barre couleur PAL
2. Sortie vidéo (VIDEO OUT) & VR601 (E-E LEVEL)
3. • Connecter un oscilloscope à la sortie vidéo (VIDEO OUT).
   ✱ 1,0 Vc-c



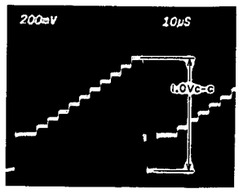
4 REGLAGE DE LA PORTEUSE ET ECART

1. "REC", signal à gradins
2. P601 ⑯ broches (REC. Y) ou TP-REC.Y & VR602 (PORTEUSE), VR603 (ECART)
3. • Connecter un oscilloscope à P601 ⑯ broches (REC.Y) ou TP-REC.Y sur la PCB PRINCIPALE.
   Ajuster VR602 et VR603 successivement jusqu'à ce que le résultat soit satisfaisant.
   ✱ VR602 (PORTEUSE) : 0,263 µs (3,8 MHz)
   ✱ VR 603 (ECART) : 0,208 µs (4,8 MHz)



8 NIVEAU DE LECTURE VIDEO

1. "REC"➔"PB", signal à gradins
2. Sortie vidéo (VIDEO OUT) & VR604 (PB LEVEL)
3. • Connecter un oscilloscope à la sortie vidéo (VIDEO OUT).
   • Faire un enregistrement sur la bande, ensuite la lire.
   ✱ Ajuster VR604 de façon à ce que le niveau de lecture (PB) devienne 1,0 Vc-c.



VII. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of earch part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Board

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination
[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (Germany)
[J] : JPN (Japan) [Y] : Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

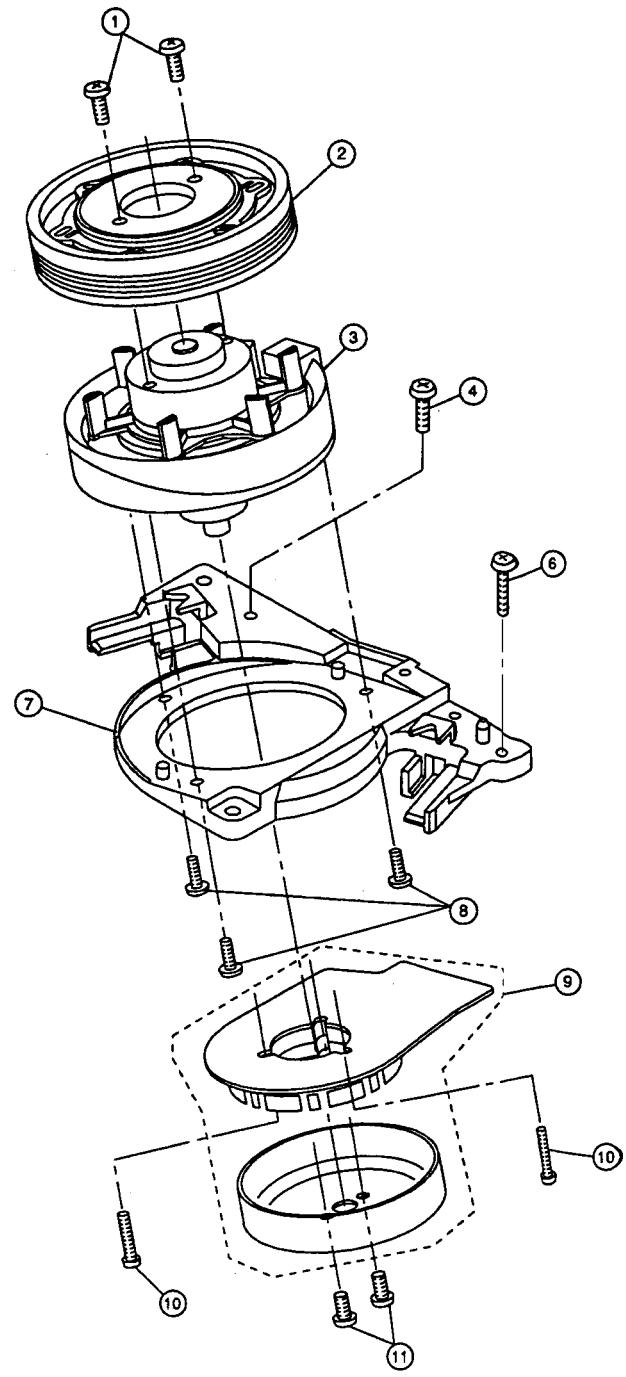
1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BB-428300N47	MECHA DECK GXS
2	BL-424913N06	ARM LOADING BLK G204EA
3	BL-420054N3	ARM PINCH ROLLER PART
4	BM-421746N	MOTOR PART
5	BM-428250N	MOTOR SCV-0604A
6	BM-419324N2	MOTOR SDV-0302A
7	⚠ BT-428419N	TRANS POW V1205 EA-F
8	BV-424915N02	LEADER(T) BLK G204EA
9	BV-424919N08	CASSETTE LOAD BLK G204EA
10	BV-424914N02	LEADER(S) BLK G204EA
11	BV-V1182A410C	LOWER DRUM BLK G415EA [G420,G425,G435]
12	BV-V1205A410B	LOWER DRUM BLK P160EM [G220,G225,G235]
13	BV-429872J	RF CONVERTER MDLK6Z326A SECAM [G420,G425,G435]
14	BV-429901J	RF CONVERTER YAA41-0081G SECAM [G220,G225,G235]
15	BV-V1182A420D	UPPER DRUM BLK G403SEG [G420,G425,G435]
16	BV-V1102A420B	UPPER DRUM BLK 425S [G220,G225,G235]
17	BV-429874J1	VIF UNIT GX SEG
18	ED-390012J	D LED GL4800 INFRARED
19	ED-422251J	D LED GL528VTB INFRARED T05
20	ED-428366J	D SCHOTTKY ERB83-004L6 S12
21	ED-428367J	D SCHOTTKY ERB84-009L6 S12
22	ED-428162J	D SCHOTTKY 1S30-E T26
23	⚠ ED-427506J	D SILI.ERA22-10 T26 1000/0.5A
24	ED-375707	D SILICON CHIP DCC010
25	ED-727191T	D SILICON CHIP RLS-73
26	ED-307572	D SILICON H 1SS131
27	ED-428420J	D SILICON RL103F-N02T05 200/1A
28	ED-511907	D SILICON 1N4002 100/1.0A
29	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
30	ED-734003J	D ZENER CHIP RD5.6MB2 T1B
31	ED-425400J	D ZENER H HZS12A3L
32	ED-425442J	D ZENER H MTZJ13A T26
33	⚠ ED-425278J	D ZENER H MTZJ20A T26
34	ED-428383J	D ZENER H MTZJ3.0B T26
35	ED-422519J	D ZENER H MTZJ4.3B T26
36	ED-404242J	D ZENER H MTZJ5.6A T26
37	ED-427218J	D ZENER H MTZJ6.2C T26
38	EE-429975J	TV TUNER TEKE4-124A
39	⚠ EF-394702J	FUSE 218 TIME 250V 2.00A
40	EH-416491J	DL EFDJLA13A
41	EI-428120J	IC M37774M5H309GP GXSYSS2
42	EI-428351J	IC BA7181FS
43	EI-429892J	IC BA7207S
44	EI-425188J	IC BA7630S
45	EI-429904J	IC BA7631F
46	EI-419278J	IC LA7285M
47	EI-428404J	IC LA7345AM-TRM
48	EI-428406J	IC LA7356M-TRM
49	EI-428397J	IC LA7372A
50	EI-390053J	IC LA7910
51	EI-403233J	IC LB1641
52	EI-394856J	IC LC8992
53	EI-389622J	IC L5631
54	EI-429889J	IC MM1112XFBE
55	EI-428401J	IC PST9130-T T05
56	EI-422128J	IC TA76431S T05
57	EI-733746J	IC UPC1823A
58	EI-422145J	IC UPD16312GB-3B4
59	EI-425668J	IC 24LC02B/SN
60	EI-353750	IC.CHIP NJM4558MB T1 T32
61	EI-733745J	OSC CE CSB500F32
62	EI-425240J	OSC X'TAL APS-1011A 16.000MHZ
63	EI-368825M1	OSC X'TAL C-002RX 32.768KHZ
64	EI-405660J	OSC X'TAL HC-49U 4.433619MHZ
65	EM-428340N	IND FL FV683G CHARACTER
66	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
67	⚠ ER-408829J	R FUSE V T05 RF25SCVTP1/4WR11K
68	⚠ ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
69	⚠ ER-428204J	R FUSE V T05RF25SVTP 1/4W 220J
70	ES-426275J	SW MICRO ESE11SV1A
71	ES-419326J1	SW MODE SELECT MMS00202ZMB0
72	ES-428362J	SW TACT SKHHLV
73	ES-414593J	SW TACT SOR-142HS T05
74	ET-428361J	DETECTOR GP1U281X
75	⚠ ET-422113J	PHOTO COUPLER PS2561-1-V
76	ET-429898J	TR C.DTA114EKA T146T08E
77	ET-429896J	TR C.DTA144EKA T146T08E
78	ET-429899J	TR C.DTA144TKA T146T08E
79	ET-430868J	TR C.DTC114EKA T146T08E
80	ET-428400J	TR C.DTC143EKA T146T08E
81	ET-429897J	TR C.DTC144EKA T146T08E
82	ET-428248J	TR C.2SA1037AK R,ST146T08E
83	ET-428249J	TR C.2SC2412K R,ST146T08E
84	ET-408902J	TR C.2SC2812 6,7 TBT08E
85	ET-428373J	TR C.2SD2318 E,U,V FPTLT16E
86	ET-716956	TR CHIP DTA144EK
87	ET-721748J	TR CHIP DTC143TK
88	ET-732638J	TR CHIP DTC144EK
89	ET-725820J	TR CHIP 2SC2735J
90	ET-389576J	TR D-C.FMW1 T148T08E
91	ET-386058J	TR D-C.IMX1 T110T08E
92	ET-356336	TR DTA114ES
93	ET-363953	TR DTA114TS
94	ET-415140J	TR DTA115TS T05
95	ET-366339	TR DTA143TS
96	ET-354415	TR DTA144ES
97	ET-373985	TR DTA144TS
98	ET-353897	TR DTC114ES
99	ET-368786	TR DTC143ZS T05
100	ET-354414	TR DTC144ES
101	ET-370310	TR DTC144TS
102	ET-390010J	TR PHOTO PT4800
103	ET-390009J	TR PHOTO PT493F
104	ET-389803J	TR 2SA933S R,S
105	ET-422154J	TR 2SB1426 Q,R T05
106	ET-400218J	TR 2SC1740S R,S
107	ET-419014J	TR 2SC1741S Q,R T05
108	ET-414816J	TR 2SC2668 Y T05
109	⚠ ET-428371J	TR 2SC4908
110	⚠ ET-422129J	TR 2SD2132 U,V T05
111	ET-416697J	TR 2SD2396 J,K
112	EW-428334J	CORD FFC BD P1.25 L130 17P [G220,G225,G235]
113	EW-428335J	CORD FFC BD P1.25 L130 19P [G420,G425,G435]
114	EX-405691J	THERMISTOR NTH5D332KA
115	HE-422168J	HEAD E HVFHF0032A
116	HR-416732J	HEAD COMBO HVMZA1161A
117	MB-420053N	BELT CAPSTAN
118	MI-420038N3	DISK CLUTCH PART
119	MI-420023N3	ARM IDLER PART
120	MI-420037N	DISK COUPLING
121	ML-428102N	LEVER CAM PINCH
122	ML-420133N1	LEVER REC-S
123	ML-420033N1	ARM COUPLING
124	ML-420170N	ARM LID OPENER
125	ML-420097N1	ARM LOADING BRAKE
126	ML-420068N2	ARM REVIEW PART
127	ML-420102N1	ARM T.U BRAKE
128	ML-420006N2	ARM TENSION PART
129	ML-420099N1	LEVER M BRAKE
130	ML-420416N3	LEVER TENSION(1)PART
131	ML-420086N1	MAIN BRAKE(S)PART
132	ML-420089N1	MAIN BRAKE(T)PART
133	ML-420092N1	REVIEW BRAKE PART
134	ML-420110N3	SLIDER PINCH
135	ML-420100N2	SLIDER TRIGGER
136	ML-428108N	STILL BRAKE PART
137	MR-420109N	HOLDER THRUST WORM
138	MR-420106N	PULLEY TRIGGER
139	MR-420022N	ROLLER IMPEDANCE

Ref. No.	Part No.	Description
140	MT-424632N1	DISK(2) PART
141	MZ-420122N	GEAR CAM MAIN
142	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
143	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
144	MZ-420132N2	PRISM LED
145	MZ-420064N1	GEAR CAM HELICAL
146	MZ-428103N	GEAR CAM R-204
147	MZ-420035N	GEAR COUPLING
148	MZ-420124N2	GEAR FRONT LOADING
149	MZ-420067N	GEAR PINCH
150	MZ-420123N	GEAR WORM WHEEL
151	MZ-420016N1	TENSION BAND PART
152	ZG-420036N	SP PUSH COUPLING
153	ZG-420105N	SP TRIGGER

HEAD DRUM BLOCK

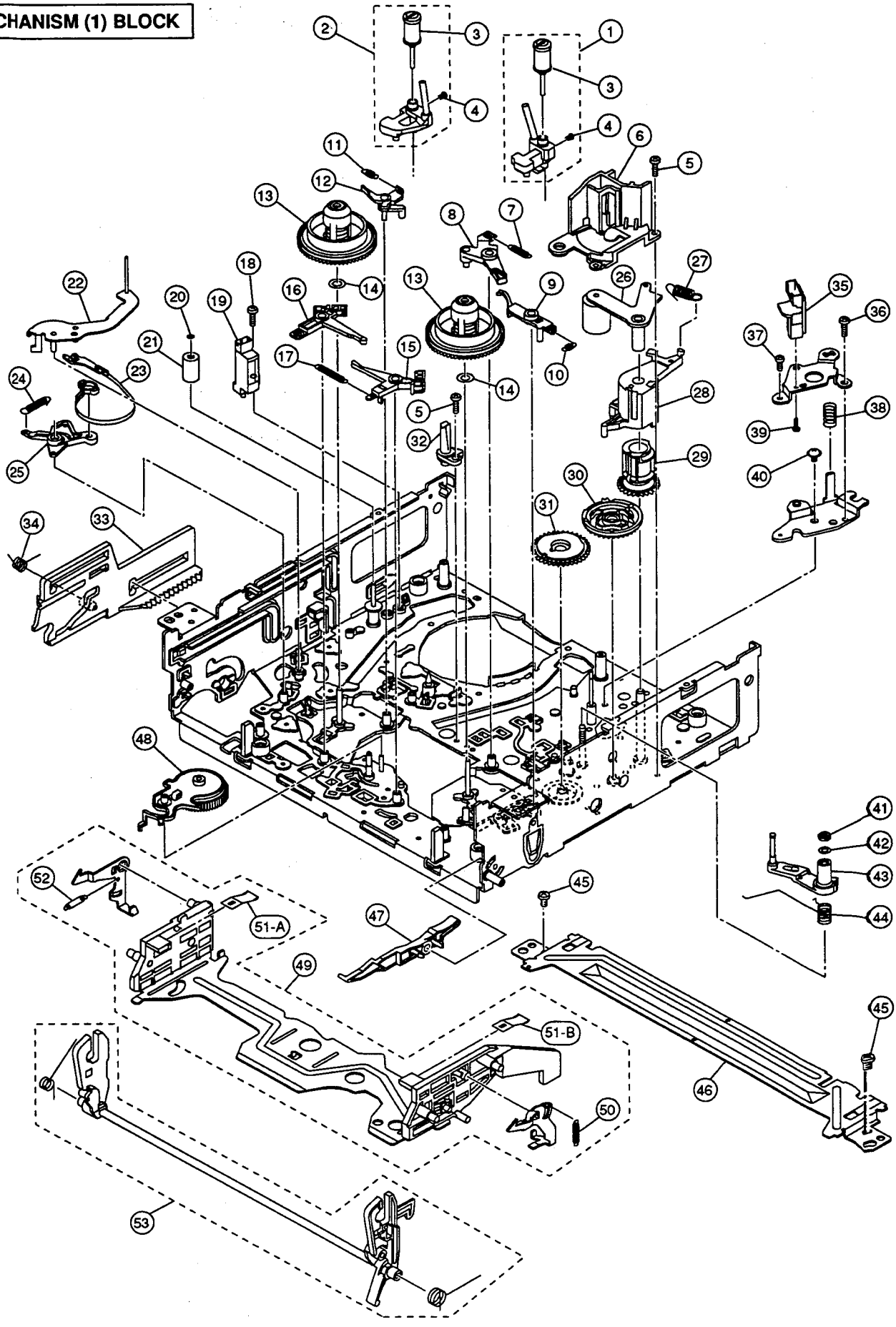


2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	ZS-321298	BID30X08STL CMT
2-A	BV-V1102A420B	UPPER DRUM BLK 425S [G220,G225,G235]
2-B	BV-V1182A420D	UPPER DRUM BLK G403SEG [G420,G425,G435]
3-A	BV-V1205A410B	LOWER DRUM BLK P160EM [G220,G225,G235]
3-B	BV-V1182A410C	LOWER DRUM BLK G415EA [G420,G425,G435]
4	ZS-358936	ST BID30X06STL CMT
5	VT-418700J1	EARTH BRUSH (2) PART AG
6	ZS-336714	ST BID30X12STL CMT
7-A	MA-429080J	CHASSIS DRUM(Y) [G220,G225,G235]
7-B	MA-429081J	CHASSIS DRUM(A) [G420,G425,G435]
8	ZS-563444	BID26X08STL CMT
9	BM-419324N2	MOTOR SDV-0302A
10	ZS-467796	PAN26X12STL CMT
11	ZS-379350	PAN30X06STL CMT

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (1) BLOCK

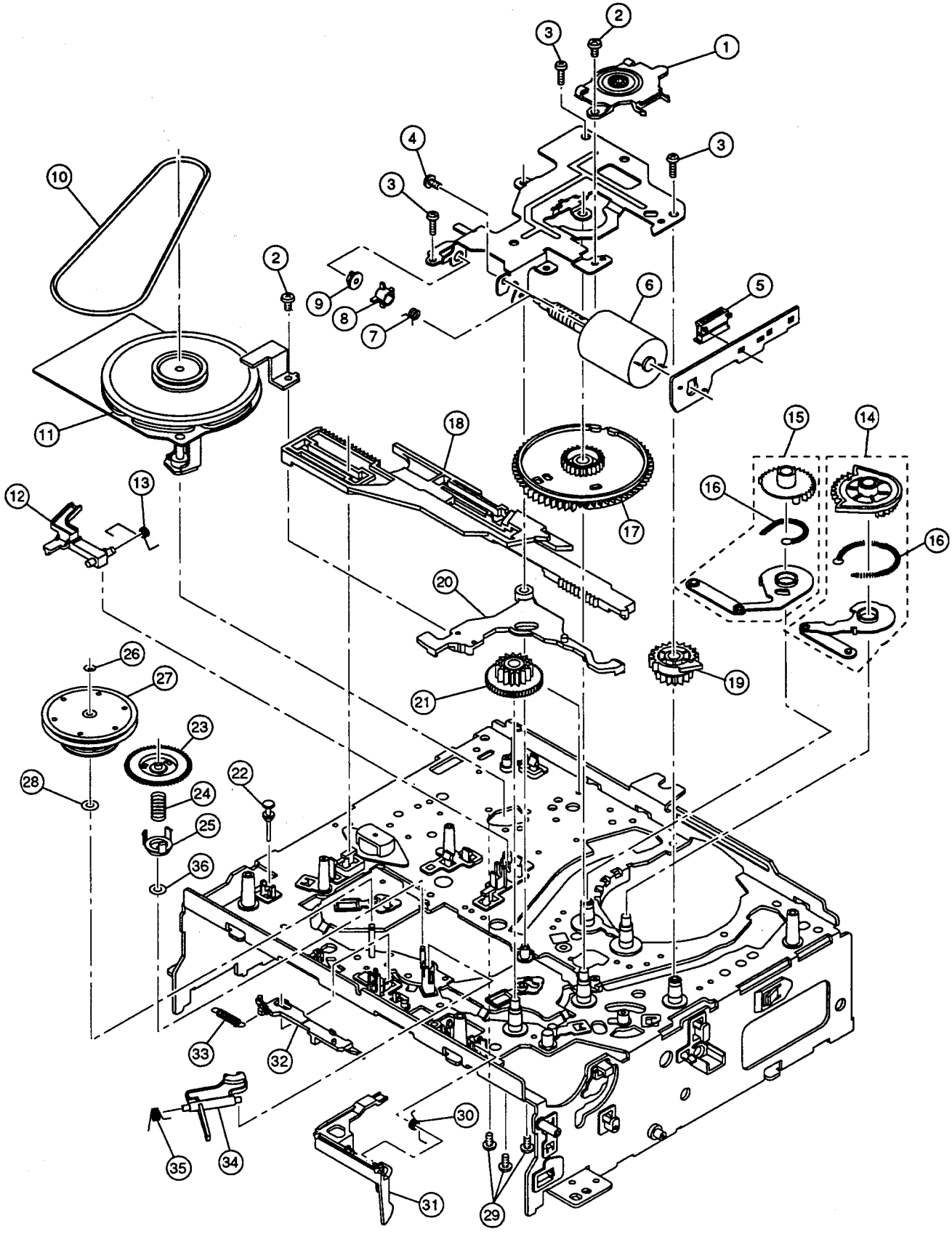


3. MECHANISM (1) BLOCK

Ref. No.	Part No.	Description
1	BV-424915N02	LEADER(T) BLK G204EA
2	BV-424914N02	LEADER(S) BLK G204EA
3	VT-387394N2	GUIDE ROLLER D8 PART
4	ZS-418616J	PAN20X2.8STL CMT PS1 LEADER
5	ZS-383761J	ST BID26X06STL CMT
6	MZ-428101N	HOLDER CAM PINCH
7	ZG-420095N	SP PULL REVIEW BRAKE
8	ML-420092N1	REVIEW BRAKE PART
9	ML-420102N1	ARM T.U BRAKE
10	ZG-420103N1	SP PULL T.U BRAKE
11	ZG-420098N	SP PULL LOADING BRAKE
12	ML-420097N1	ARM LOADING BRAKE
13	MT-424632N1	DISK(2) PART
14	ZW-424667N	REEL WASHER
15	ML-420089N1	MAIN BRAKE(T)PART
16	ML-420086N1	MAIN BRAKE(S)PART
17	ZG-420091N	SP PULL MAIN BRAKE
18	ZS-403887J	PT BID26X12STL CMT
19	HE-422168J	HEAD E HVFHF0032A
20	ZW-395919J	SLIT W16X035X025 PSL
21	MR-420022N	ROLLER IMPEDANCE
22	ML-420006N2	ARM TENSION PART
23	MZ-420016N1	TENSION BAND PART
24	ZG-420015N1	SP PULL TENSION(1)
25	ML-420416N3	LEVER TENSION(1)PART
26	BL-420054N3	ARM PINCH ROLLER PART
27	ZG-420062N	SP PULL PINCH
28	ML-428102N	LEVER CAM PINCH
29	MZ-420064N1	GEAR CAM HELICAL
30	MZ-428103N	GEAR CAM R-204
31	MZ-420067N	GEAR PINCH
32	MZ-420132N2	PRISM LED
33	ML-420168N1	SLIDER FRONT LOADING
34	ZG-420169N1	SP TORSION SLIDER
35	HR-416732J	HEAD COMBO HVMZA1161A
36	ZS-550708	PAN26X08STL NI3
37	ZS-422170J	PAN26X07STL CMT CP
38	ZG-420075N	SP PUSH A/C
39	ZS-418480J	PAN20X2.2STL BZN PS1
40	ZS-362533	ST PAN30X05STL CMT C080
41	ZW-350839	N30 NYLON
42	ZW-324417	PW31X060X050PSL
43	ML-420068N2	ARM REVIEW PART
44	ZG-420071N1	SP TORSION REVIEW
45	ZS-358936	ST BID30X06STL CMT
46	MZ-420172N2	PLATE UPPER
47	ML-420170N	ARM LID OPENER
48	MI-420023N3	ARM IDLER PART
49	BV-424919N08	CASSETTE LOAD BLK G204EA
50	ZG-420167N1	SP PULL DUMPER(T)
51-A	ZG-426481N	SP PLATE UPPER(S)
51-B	ZG-425178N	SP PLATE UPPER(T)
52	ZG-420166N	SP PULL DUMPER(S)
53	BL-424913N06	ARM LOADING BLK G204EA
55	BB-428300N47	MECHA DECK GXS

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (2) BLOCK



4. MECHANISM (2) BLOCK

Ref. No.	Part No.	Description
1	ES-419326J1	SW MODE SELECT MMS00202ZMB0
2	ZS-358936	ST BID30X06STL CMT
3	ZS-389950J	PT BID26X10STL CMT
4	ZS-425981	BID30X03STL CMT
5	EJ-422169J	SOCKET TKC-M07X-A1 7P
6	BM-421746N	MOTOR PART
7	ZG-420105N	SP TRIGGER
8	MR-420106N	PULLEY TRIGGER
9	MR-420109N	HOLDER THRUST WORM
10	MB-420053N	BELT CAPSTAN
11	BM-428250N	MOTOR SCV-0604A
12	ML-428108N	STILL BRAKE PART
13	ZG-428110N	SP TORSION S.B
14	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
15	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
16	ZG-420117N	SP PULL TOGGLE
17	MZ-420122N	GEAR CAM MAIN
18	ML-420110N3	SLIDER PINCH
19	MZ-420124N2	GEAR FRONT LOADING
20	ML-420099N1	LEVER M BRAKE
21	MZ-420123N	GEAR WORM WHEEL
22	MZ-420135N	SLIDE S-SW
23	MZ-420035N	GEAR COUPLING
24	ZG-420036N	SP PUSH COUPLING
25	MI-420037N	DISK COUPLING
26	ZW-418816J	SLIT W21X050X050PSL
27	MI-420038N3	DISK CLUTCH PART
28	ZW-389923J	PW26X060X050PSL
29	ZS-432843	PAN26X04STL CMT
30	ZG-420134N1	SP TORSION REC-S
31	ML-420133N1	LEVER REC-S
32	ML-420100N2	SLIDER TRIGGER
33	ZG-420101N	SP PULL TRIGGER
34	ML-420033N1	ARM COUPLING
35	ZG-420034N2	SP TORSION COUPLING
36	ZW-321317	PW21X040X050PSL

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

5. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-V1207V600A	NS PC(#) MAIN BLK G220SEG/NS [G220,G225,G235]
1-B	BA-V1207Q600B	FR PC(#) MAIN BLK G420SEG/FR [G420,G425,G435]

PC (#) MAIN BLK CONSISTIS OF FOLLOWING P.C. BOARDS.

- MAIN P.C. BOARD
- VIF P.C. BOARD
- PRE-AMP P.C. BOARD
- DETECT P.C. BOARD

6. MAIN P.C. BOARD

Ref. No.	Part No.	Description
BT1-A	BV-429901J	RF CONVERTER YAA41-0081G SECAM [G220,G225,G235]
BT1-B	BV-429872J	RF CONVERTER MDLK6Z326A SECAM [G420,G425,G435]
C201	⚠ EC-422101J	C MMY V CUT MKTR40 104M 275AC
C202	⚠ EC-422101J	C MMY V CUT MKTR40 104M 275AC
C204	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C205	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C206	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C207	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C208	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C209	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C210	EC-422103J	C EC V CUT TWSS 470M400.0DC
C211	⚠ EC-389170J	C MMY V F12 MMHF 473K 400DC
C212	⚠ EC-418759J	C CE V T05 CC45 SL121K1000DC
C213	EC-405612J	C EC V T05 SXE4 4R7M 50.0DC
C214	EC-338572	C MY V F05 AMZF 333J 50DC
C217	EC-338574	C MY V F05 AMZF 223J 50DC
C220	EC-418690J	C EC V CUT SXE12 222M 6.3DC
C436	⚠ EC-416655J	C DBL.LAYER T05 FM0H473Z 5.5DC
DL775	EH-416491J	DL EFDJLA13A
D3	ED-307572	D SILICON H 1SS131
D4	ED-425442J	D ZENER H MTZJ13A T26
D5	ED-404242J	D ZENER H MTZJ5.6A T26
D81	ED-307572	D SILICON H 1SS131
D82	ED-307572	D SILICON H 1SS131
D201	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D202	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D203	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D204	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D205	⚠ ED-427506J	D SILI.ERA22-10 T26 1000/0.5A
D207	ED-307572	D SILICON H 1SS131
D208	ED-428162J	D SCHOTTKY 1S30-E T26
D209	ED-428420J	D SILICON RL103F-N02T05 200/1A
D210	ED-428366J	D SCHOTTKY ERB83-004L6 S12
D212	ED-428367J	D SCHOTTKY ERB84-009L6 S12
D214	ED-428420J	D SILICON RL103F-N02T05 200/1A
D215	⚠ ED-425278J	D ZENER H MTZJ20A T26
D218	ED-307572	D SILICON H 1SS131
D219	ED-422519J	D ZENER H MTZJ4.3B T26
D220	ED-511907	D SILICON 1N4002 100/1.0A
D221	ED-511907	D SILICON 1N4002 100/1.0A
D224	ED-307572	D SILICON H 1SS131
D225	ED-425400J	D ZENER H HZS12A3L
D226	ED-307572	D SILICON H 1SS131
D229	ED-404242J	D ZENER H MTZJ5.6A T26
D231	ED-307572	D SILICON H 1SS131
D232	ED-307572	D SILICON H 1SS131
D401	ED-422251J	D LED GL528VTB INFRARED T05
D402	ED-390012J	D LED GL4800 INFRARED
D403	ED-390012J	D LED GL4800 INFRARED
D404	ED-427218J	D ZENER H MTZJ6.2C T26
D405	ED-307572	D SILICON H 1SS131
D406	ED-307572	D SILICON H 1SS131
D410	ED-307572	D SILICON H 1SS131

Ref. No.	Part No.	Description
D411	ED-428383J	D ZENER H MTZJ3.0B T26
D412	ED-307572	D SILICON H 1SS131
D413	ED-307572	D SILICON H 1SS131
D601	ED-307572	D SILICON H 1SS131
D602	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131
D604	ED-307572	D SILICON H 1SS131
D605	ED-307572	D SILICON H 1SS131
D606	ED-307572	D SILICON H 1SS131
D607	ED-307572	D SILICON H 1SS131 [G420,G425,G435]
D665	ED-307572	D SILICON H 1SS131
D750	ED-307572	D SILICON H 1SS131
D781	ED-307572	D SILICON H 1SS131
FL330	EO-429900J	COIL OSC 1 125-8121-41 70.0KHZ
FL401	EM-428340N	IND FL FV683G CHARACTER
FL601	EO-429920J	FILTER LC LP TZV-75W 300N
FR202	⚠ ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
FR203	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
FR204	⚠ ER-428204J	R FUSE V T05RF25SVTP 1/4W 220J
FR206	⚠ ER-408829J	R FUSE V T05 RF25SCVTP1/4WR11K
FR401	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
F201	⚠ EF-394702J	FUSE 218 TIME 250V 2.00A
IC1	EI-389622J	IC L5631
IC2	EI-390053J	IC LA7910
IC201	EI-422128J	IC TA76431S T05
IC301	EI-419278J	IC LA7285M
IC401	EI-428120J	IC M37774M5H309GP GXSYSS2
IC402	EI-353750	IC.CHIP NJM4558MB T1 T32
IC403	EI-403233J	IC LB1641
IC404	EI-425668J	IC 24LC02B/SN
IC405	EI-422145J	IC UPD16312GB-3B4
IC406	EI-428401J	IC PST9130-T T05
IC601	EI-428404J	IC LA7345AM-TRM
IC602	EI-394856J	IC LC8992
IC680	EI-428406J	IC LA7356M-TRM
IC730	EI-429889J	IC MM1112XFBE
IC750	EI-429892J	IC BA7207S
IF1	BV-429874J1	VIF UNIT GX SEG
L1	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L201	⚠ EO-428349N	COIL LF UF1922C4-152Y1R5-01
L202	⚠ EO-428417N	COIL LF HF2022-333Y0R3-01
L203	EO-422134J	COIL FIX 2 PC7-330K 330K
L205	EO-422134J	COIL FIX 2 PC7-330K 330K
L352	EO-345881	COIL FIX 1 EL0606SKI 101J
L401	EO-392660J	COIL FIX 1 EL0405SKI 220K
L402	EO-428476J	COIL FIX 1 LF-5.0S T26 R33K
L601	EO-368619	COIL FIX 1 LAP02 F05 3R3K
L602-A	EO-410094J	COIL FIX 1 SPT0203SA T26 180J [G220,G225,G235]
L602-B	EO-414830J	COIL FIX 1 LAP02TA T26 220J [G420,G425,G435]
L603	EO-410103J	COIL FIX 1 SPT0203SA T26 151J
L604	EO-414829J	COIL FIX 1 LAP02TA T26 181J
L651	EO-345881	COIL FIX 1 EL0606SKI 101J
L652	EO-356722	COIL FIX 1 LAP02 F05 6R8K
L653	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L665	EO-382983J	COIL FIX 1 EL0405SKI 561J
L666	EO-428359J	COIL FIX 1 LF-5.0S T26 271J
L701	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L702	EO-414829J	COIL FIX 1 LAP02TA T26 181J
L703	EO-414833J	COIL FIX 1 LAP02TA T26 8R2J
L704	EO-428360J	COIL FIX 1 LF-5.0S T26 331J
L715	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L717	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L730	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L736	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L750	EO-424210J	COIL FIX 1 LF-5.0S T26 120J
L751	EO-416714J	COIL FIX 1 LAP02TA T26 470J
L752	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L753	EO-404430J	COIL FIX 1 SPT0203SA T26 101J
L775	EO-410093J	COIL FIX 1 SPT0203SA T26 150J
L776	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L777	EO-412304J	COIL FIX 1 LAP02TA T26 390J
L780	EO-416714J	COIL FIX 1 LAP02TA T26 470J
L781	EO-416714J	COIL FIX 1 LAP02TA T26 470J [G420,G425,G435]

Ref. No.	Part No.	Description
L790	EO-345881	COIL FIX 1 EL0606SKI 101J
L791	EO-345881	COIL FIX 1 EL0606SKI 101J
L792	EO-345881	COIL FIX 1 EL0606SKI 101J
PH201	⚠ ET-422113J	PHOTO COUPLER PS2561-1-V
P101	EJ-429906N	PLUG TSK-B17P-A1 17P
P201	⚠ EJ-416590J1	SOCKET INLET CCT-2302-0371 2P
P401	EJ-422178J	PLUG TKC-G08P-A1 8P
P402	EJ-422176J	PLUG TKC-M07P-B1 7P
P601-A	EJ-428356N	SOCKET 00 6216 017 000 17P [G220,G225,G235]
P601-B	EJ-428357N	SOCKET 00 6216 019 000 19P [G420,G425,G435]
R201	⚠ ER-418739J	R CT P RGG3 3W 4R7K
R206	⚠ ER-428396J	R OMF H S15 FS ERG2SJP 2W 823J
R208	⚠ ER-422186J	R OMF H S15 FS PR02 2W 151J
R210	⚠ ER-428386J	R OMF V T05FS ERX1SE 1W R56J
SW401	ES-426275J	SW MICRO ESE11SV1A
SW402	ES-428362J	SW TACT SKHHLV
SW403	ES-414593J	SW TACT SOR-142HS T05
SW404	ES-414593J	SW TACT SOR-142HS T05
SW405	ES-414593J	SW TACT SOR-142HS T05
SW406	ES-414593J	SW TACT SOR-142HS T05
SW407	ES-414593J	SW TACT SOR-142HS T05
SW408	ES-414593J	SW TACT SOR-142HS T05
SW409	ES-414593J	SW TACT SOR-142HS T05
TR5	ET-414816J	TR 2SC2668 Y T05
TR6	ET-389803J	TR 2SA933S R,S
TR8	ET-353897	TR DTC114ES
TR10	ET-400218J	TR 2SC1740S R,S
TR11	ET-370310	TR DTC144TS
TR12	ET-400218J	TR 2SC1740S R,S
TR13	ET-389803J	TR 2SA933S R,S
TR14	ET-400218J	TR 2SC1740S R,S
TR15	ET-400218J	TR 2SC1740S R,S
TR81	ET-353897	TR DTC114ES
TR82	ET-389803J	TR 2SA933S R,S
TR83	ET-400218J	TR 2SC1740S R,S
TR84	ET-373985	TR DTA144TS
TR85	ET-354414	TR DTC144ES
TR101	ET-430868J	TR C.DTC114EKA T146T08E
TR102	ET-389803J	TR 2SA933S R,S
TR201	⚠ ET-428371J	TR 2SC4908
TR202	⚠ ET-422129J	TR 2SD2132 U,V T05
TR203	ET-366339	TR DTA143TS
TR204	ET-415140J	TR DTA115TS T05
TR205	ET-400218J	TR 2SC1740S R,S
TR207	ET-428373J	TR C.2SD2318 E,U,V FPTLT16E
TR208	ET-400218J	TR 2SC1740S R,S
TR210	ET-422154J	TR 2SB1426 Q,R T05
TR211	ET-416697J	TR 2SD2396 J,K
TR212	ET-400218J	TR 2SC1740S R,S
TR214	ET-368786	TR DTC143ZS T05
TR215	ET-400218J	TR 2SC1740S R,S
TR216	ET-353897	TR DTC114ES
TR301	ET-419014J	TR 2SC1741S Q,R T05
TR302	ET-370310	TR DTC144TS
TR351	ET-400218J	TR 2SC1740S R,S
TR401	ET-390009J	TR PHOTO PT493F
TR402	ET-390009J	TR PHOTO PT493F
TR403	ET-390010J	TR PHOTO PT4800
TR404	ET-390010J	TR PHOTO PT4800
TR405	ET-354414	TR DTC144ES
TR406	ET-389803J	TR 2SA933S R,S
TR409	ET-428400J	TR C.DTC143EKA T146T08E
TR601	ET-354414	TR DTC144ES
TR602	ET-429896J	TR C.DTA144EKA T146T08E
TR603	ET-386058J	TR D-C.IMX1 T110T08E
TR605	ET-354414	TR DTC144ES [G420,G425,G435]
TR606	ET-429896J	TR C.DTA144EKA T146T08E [G420,G425,G435]
TR607	ET-428248J	TR C.2SA1037AK R,S T146T08E
TR608	ET-429897J	TR C.DTC144EKA T146T08E
TR609	ET-429896J	TR C.DTA144EKA T146T08E
TR651	ET-428248J	TR C.2SA1037AK R,S T146T08E
TR666	ET-400218J	TR 2SC1740S R,S
TR667	ET-400218J	TR 2SC1740S R,S

Ref. No.	Part No.	Description
TR668	ET-354414	TR DTC144ES
TR669	ET-428248J	TR C.2SA1037AK R,S T146T08E
TR670	ET-428249J	TR C.2SC2412K R,S T146T08E
TR685	ET-389576J	TR D-C.FMW1 T148T08E
TR701	ET-370310	TR DTC144TS
TR702	ET-400218J	TR 2SC1740S R,S
TR703	ET-400218J	TR 2SC1740S R,S
TR715	ET-428249J	TR C.2SC2412K R,S T146T08E
TR716	ET-386058J	TR D-C.IMX1 T110T08E
TR725	ET-429896J	TR C.DTA144EKA T146T08E
TR730	ET-428249J	TR C.2SC2412K R,S T146T08E
TR731	ET-400218J	TR 2SC1740S R,S
TR732	ET-428248J	TR C.2SA1037AK R,S T146T08E
TR733	ET-429898J	TR C.DTA114EKA T146T08E
TR751	ET-429897J	TR C.DTC144EKA T146T08E
TR752	ET-428248J	TR C.2SA1037AK R,S T146T08E
TR753	ET-429899J	TR C.DTA144TKA T146T08E
TR775	ET-428249J	TR C.2SC2412K R,S T146T08E
TU1	EE-429975J	TV TUNER TEKE4-124A
T201	⚠ BT-428419N	TRANS POW V1205 EA-F
VR601	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR602	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR603	EV-389482J	R S-FIX H T05EVNDXAA03 0.1W682
VR604	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR665	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
VR750	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
VR751	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
X401	EI-425240J	OSC X'TAL APS-1011A 16.000MHZ
X402	EI-368825M1	OSC X'TAL C-002RX 32.768KHZ
X601	EI-405660J	OSC X'TAL HC-49U 4.433619MHZ
1	SZ-426915J	HOLDER S/E SENSOR 2
2	SZ-420136J	HOLDER PHOTO SENSOR
3	SZ-429350N	HOLDER FLD (SG)
4	SZ-429351J	HOLDER LED(1)

7. VIF UNIT

Ref. No.	Part No.	Description
D1	ED-727191T	D SILICON CHIP RLS-73
D2	ED-727191T	D SILICON CHIP RLS-73
D3	ED-727191T	D SILICON CHIP RLS-73
D5	ED-734003J	D ZENER CHIP RD5.6MB2 T1B
D6	ED-375707	D SILICON CHIP DCC010
FL1	EH-733740J	FILTER CE SAF41MA70Z
FL2	EH-733741J	FILTER CE SAF32.4MCA70Z
FL3	EH-730625J	FILTER CE SAF38.9MZW70Z
FL4	EH-732528J	FILTER CE SAF33.4MC70Z
FL5	EH-368948J1	FILTER CE TPS5.5MW 5.5000MHZ
FL6	EH-376338J1	FILTER CE TPS6.5MB
FL7	EH-373920J1	FILTER CE SFE5.5MB
IC1	EI-733746J	IC UPC1823A
L2	EO-733267J	COIL FIX 1 EL0405RA T05 1R5K
L3	EO-381189J	COIL FIX 1 EL0405SKI 100K
L4	EO-381189J	COIL FIX 1 EL0405SKI 100K
L5	EO-381189J	COIL FIX 1 EL0405SKI 100K
L6	EO-392660J	COIL FIX 1 EL0405SKI 220K
L7	EO-381189J	COIL FIX 1 EL0405SKI 100K
L8	EO-381189J	COIL FIX 1 EL0405SKI 100K
L9	EO-725821J	COIL SIF DET 6F16265A1
L10	EO-733744J	COIL AFT 6F16580A1
L11	EO-381189J	COIL FIX 1 EL0405SKI 100K
L14	EO-386084J	COIL FIX 1 EL0405SKI 3R3K
L15	EO-387802J	COIL FIX 1 EL0405SKI 330K
L16	EO-734004J	COIL TRAP 6F16469A1
Q2	ET-725820J	TR CHIP 2SC2735J
Q4	ET-732638J	TR CHIP DTC144EK
Q5	ET-732638J	TR CHIP DTC144EK
Q6	ET-716956	TR CHIP DTA144EK
Q7	ET-716956	TR CHIP DTA144EK
Q8	ET-721748J	TR CHIP DTC143TK
Q9	ET-408902J	TR C.2SC2812 6,7 TBT08E
Q10	ET-428248J	TR C.2SA1037AK R,S T146T08E
Q14	ET-428248J	TR C.2SA1037AK R,S T146T08E
Q15	ET-732638J	TR CHIP DTC144EK
Q16	ET-408902J	TR C.2SC2812 6,7 TBT08E
Q18	ET-725820J	TR CHIP 2SC2735J
VC1	EC-412083J	C S-FIX H T05 TZ03T 3.0-11
VR1	EV-397570J	R S-FIX H T05 RH0638C 0.1W 105
X1	EI-733745J	OSC CE CSB500F32

8. PRE-AMP P.C. BOARD (G220,G225,G235)

Ref. No.	Part No.	Description
IC831	EI-428351J	IC BA7181FS
L831	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L832	EO-345881	COIL FIX 1 EL0606SKI 101J
P831	EJ-428350N	SOCKET 00 6216 017 100 17P
P832	EJ-428388J	SOCKET 04FE-BT-VK-N 4P
P833	EJ-422094J1	SOCKET TKC-F06X-E1 6P
TH831	EX-405691J	THERMISTOR NTH5D332KA
TR832	ET-400218J	TR 2SC1740S R,S

9. PRE-AMP P.C. BOARD (G420,G425,G435)

Ref. No.	Part No.	Description
D801	ED-307572	D SILICON H 1SS131
IC801	EI-428397J	IC LA7372A
L801	EO-345881	COIL FIX 1 EL0606SKI 101J
P801	EJ-428355N	SOCKET 00 6216 019 100 19P
P802	EJ-422094J1	SOCKET TKC-F06X-E1 6P
P803	EJ-422094J1	SOCKET TKC-F06X-E1 6P
TR801	ET-356336	TR DTA114ES
TR802	ET-400218J	TR 2SC1740S R,S
TR803	ET-363953	TR DTA114TS
VR801	EV-429998J	R S-FIX V T05EVNDCAA03 0.1W152
VR802	EV-429998J	R S-FIX V T05EVNDCAA03 0.1W152

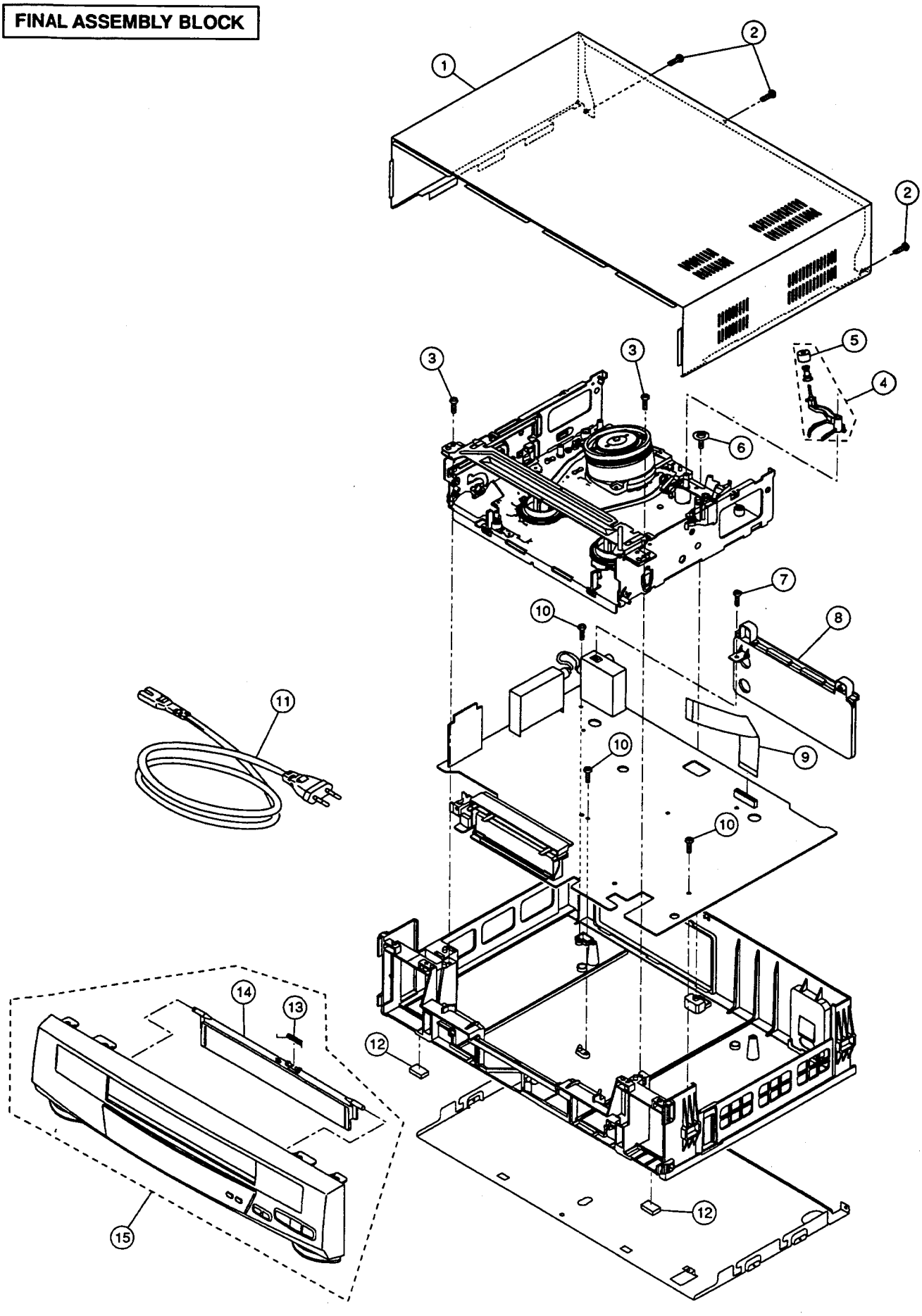
10. DETECT P.C. BOARD

Ref. No.	Part No.	Description
PH401	ET-428361J	DETECTOR GP1U281X

11. CANAL P.C. BOARD

Ref. No.	Part No.	Description
D901	ED-307572	D SILICON H 1SS131
IC901	EI-429904J	IC BA7631F
IC902	EI-425188J	IC BA7630S
L901	EO-345881	COIL FIX 1 EL0606SKI 101J
L902	EO-345881	COIL FIX 1 EL0606SKI 101J
L903	EO-345881	COIL FIX 1 EL0606SKI 101J
P901	EJ-428276F	SOCKET 0350 535100 BLACK 21P
P902	EJ-428274F	SOCKET 0350 535140 BLUE 21P
P903	EJ-429905N	SOCKET TSK-B17X-A1 17P
TR901	ET-354414	TR DTC144ES
TR902	ET-354415	TR DTA144ES
TR903	ET-400218J	TR 2SC1740S R,S
TR904	ET-389803J	TR 2SA933S R,S

FINAL ASSEMBLY BLOCK



12. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-429239J	COVER UPPER GX
2	ZS-393515J	BT BID30X10STL BZN
3	ZS-362378	PLX BID30X10STL CMT
4	HZ-V1182A200A	HEAD CLEANER BLK G204ES
5	HZ-417681J	ROLLER HEAD CLEANER(2)
6	ZS-357946	PLX PAN30X10STL CMT C080
7	ZS-323728	BID30X05STL CMT
8	SP-429104N	PANEL REAR JACK SEG (SG)
9-A	EW-428334J	CORD FFC BD P1.25 L130 17P [G220,G225,G235]
9-B	EW-428335J	CORD FFC BD P1.25 L130 19P [G420,G425,G435]
10	ZS-376521	BT BID30X08STL CMT
11	⚠ EW-412522J1	AC CORD200S KP419CKS15F B V
12	SA-420497J	FOOT AX
13	ZG-429460J	SP MASK(4)
14-A	SE-429504N	MASK CASSETTE VS-G220(F) (SG)
14-B	SE-429505N	MASK CASSETTE 2 VS-G225(F)(SG)
14-C	SE-429508N	MASK CASSETTE VS-G235(F) (SG)
14-D	SE-429544F	MASK CASSETTE(B)VS-G420(F1)(FR)
14-E	SE-429514F	MASK CASSETTE 2 VS-G425(F1)(FR)
14-F	SE-429516F	MASK CASSETTE 2 VS-G435(F1)(FR)
15-A	BD-429485N	PANEL F(A)G220SEG PART (SG)
15-B	BD-429487N	PANEL F(A)G225SEG PART (SG)
15-C	BD-429489N	PANEL F(A)G235SEG PART (SG)
15-D	BD-429529F	PANEL F(B)G420SEG PART (FR)
15-E	BD-429531F	PANEL F(B)G425SEG PART (FR)
15-F	BD-429533F	PANEL F(B)G435SEG PART (FR)

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

13. ACCESSORY

Ref. No.	Part No.	Description
1	AV-348415J1	CORD SECAM
2	EW-427525N	CORD 21PIN AV CABLE
3-A	AV-428325N	REMOCON RC-X101F [G220SEG,G420SEG]
3-B	AV-428326N	REMOCON RC-X121F [G225SEG,G425SEG]
3-C	AV-428323J	REMOCON RC-X521F [G235SEG]
3-D	AV-428324J	REMOCON RC-X524F [G435SEG]
4	SC-733720J1	COVER BATTERY (GX) [RC-X521,X524]
5	SP-733723J	LID AX SHOWVIEW-1 [RC-X521,X524]

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AV348415J1	13-1	ED307572	6-D781	EJ422176J	6-P402	EO734004J	7-L16
AV428323J	13-3-C	ED307572	9-D801	EJ422178J	6-P401	ER408829J	6-FR206
AV428324J	13-3-D	ED307572	11-D901	EJ428274F	11-P902	ER418648J	6-FR202
AV428325N	13-3-A	ED375707	7-D6	EJ428276F	11-P901	ER418739J	6-R201
AV428326N	13-3-B	ED390012J	6-D402	EJ428350N	8-P831	ER422186J	6-R208
BAV1207Q600B	5-1-B	ED390012J	6-D403	EJ428355N	9-P801	ER425269J	6-FR203
BAV1207V600A	5-1-A	ED404242J	6-D5	EJ428356N	6-P601-A	ER425269J	6-FR401
BB428300N47	3-55	ED404242J	6-D229	EJ428357N	6-P601-B	ER428204J	6-FR204
BD429485N	12-15-A	ED422125J	6-D201	EJ428388J	8-P832	ER428386J	6-R210
BD429487N	12-15-B	ED422125J	6-D202	EJ429905N	11-P903	ER428396J	6-R206
BD429489N	12-15-C	ED422125J	6-D203	EJ429906N	6-P101	ES414593J	6-SW403
BD429529F	12-15-D	ED422125J	6-D204	EM428340N	6-FL401	ES414593J	6-SW404
BD429531F	12-15-E	ED422251J	6-D401	EO345881	6-L352	ES414593J	6-SW405
BD429533F	12-15-F	ED422519J	6-D219	EO345881	6-L651	ES414593J	6-SW406
BL420054N3	3-26	ED425278J	6-D215	EO345881	6-L790	ES414593J	6-SW407
BL424913N06	3-53	ED425400J	6-D225	EO345881	6-L791	ES414593J	6-SW408
BM419324N2	2-9	ED425442J	6-D4	EO345881	6-L792	ES414593J	6-SW409
BM421746N	4-6	ED427218J	6-D404	EO345881	8-L832	ES419326J1	4-1
BM428250N	4-11	ED427506J	6-D205	EO345881	9-L801	ES426275J	6-SW401
BT428419N	6-T201	ED428162J	6-D208	EO345881	11-L901	ES428362J	6-SW402
BVV1102A420B	2-2-A	ED428366J	6-D210	EO345881	11-L902	ET353897	6-TR8
BVV1182A410C	2-3-B	ED428367J	6-D212	EO345881	11-L903	ET353897	6-TR81
BVV1182A420D	2-2-B	ED428383J	6-D411	EO356722	6-L652	ET353897	6-TR216
BVV1205A410B	2-3-A	ED428420J	6-D209	EO368619	6-L601	ET354414	6-TR85
BV424914N02	3-2	ED428420J	6-D214	EO381189J	7-L3	ET354414	6-TR405
BV424915N02	3-1	ED511907	6-D220	EO381189J	7-L4	ET354414	6-TR601
BV424919N08	3-49	ED511907	6-D221	EO381189J	7-L5	ET354414	6-TR605
BV429872J	6-BT1-B	ED727191T	7-D1	EO381189J	7-L7	ET354414	6-TR668
BV429874J1	6-IF1	ED727191T	7-D2	EO381189J	7-L8	ET354414	11-TR901
BV429901J	6-BT1-A	ED727191T	7-D3	EO381189J	7-L11	ET354415	11-TR902
EC338572	6-C214	ED734003J	7-D5	EO382983J	6-L665	ET356336	9-TR801
EC338574	6-C217	EE429975J	6-TU1	EO386084J	7-L14	ET363953	9-TR803
EC389170J	6-C211	EF394702J	6-F201	EO387802J	7-L15	ET366339	6-TR203
EC405612J	6-C213	EH368948J1	7-FL5	EO392660J	6-L401	ET368786	6-TR214
EC412083J	7-VC1	EH373920J1	7-FL7	EO392660J	7-L6	ET370310	6-TR11
EC416655J	6-C436	EH376338J1	7-FL6	EO404430J	6-L753	ET370310	6-TR302
EC418690J	6-C220	EH416491J	6-DL775	EO410091J	6-L1	ET370310	6-TR701
EC418706J	6-C204	EH730625J	7-FL3	EO410093J	6-L775	ET373985	6-TR84
EC418706J	6-C205	EH732528J	7-FL4	EO410094J	6-L602-A	ET386058J	6-TR603
EC418706J	6-C206	EH733740J	7-FL1	EO410100J	6-L653	ET386058J	6-TR716
EC418706J	6-C207	EH733741J	7-FL2	EO410100J	6-L701	ET389576J	6-TR685
EC418706J	6-C208	EI353750	6-IC402	EO410100J	6-L715	ET389803J	6-TR6
EC418706J	6-C209	EI368825M1	6-X402	EO410100J	6-L752	ET389803J	6-TR13
EC418759J	6-C212	EI389622J	6-IC1	EO410103J	6-L603	ET389803J	6-TR82
EC422101J	6-C201	EI390053J	6-IC2	EO412304J	6-L777	ET389803J	6-TR102
EC422101J	6-C202	EI394856J	6-IC602	EO414616J	6-L717	ET389803J	6-TR406
EC422103J	6-C210	EI403233J	6-IC403	EO414616J	6-L730	ET389803J	11-TR904
ED307572	6-D3	EI405660J	6-X601	EO414616J	6-L736	ET390009J	6-TR401
ED307572	6-D81	EI419278J	6-IC301	EO414616J	6-L776	ET390009J	6-TR402
ED307572	6-D82	EI422128J	6-IC201	EO414616J	8-L831	ET390010J	6-TR403
ED307572	6-D207	EI422145J	6-IC405	EO414829J	6-L604	ET390010J	6-TR404
ED307572	6-D218	EI425188J	11-IC902	EO414829J	6-L702	ET400218J	6-TR10
ED307572	6-D224	EI425240J	6-X401	EO414830J	6-L602-B	ET400218J	6-TR12
ED307572	6-D226	EI425668J	6-IC404	EO414833J	6-L703	ET400218J	6-TR14
ED307572	6-D231	EI428120J	6-IC401	EO416714J	6-L751	ET400218J	6-TR15
ED307572	6-D232	EI428351J	8-IC831	EO416714J	6-L780	ET400218J	6-TR83
ED307572	6-D405	EI428397J	9-IC801	EO416714J	6-L781	ET400218J	6-TR205
ED307572	6-D406	EI428401J	6-IC406	EO422134J	6-L203	ET400218J	6-TR208
ED307572	6-D410	EI428404J	6-IC601	EO422134J	6-L205	ET400218J	6-TR212
ED307572	6-D412	EI428406J	6-IC680	EO424210J	6-L750	ET400218J	6-TR215
ED307572	6-D413	EI429889J	6-IC730	EO428349N	6-L201	ET400218J	6-TR351
ED307572	6-D601	EI429892J	6-IC750	EO428359J	6-L666	ET400218J	6-TR666
ED307572	6-D602	EI429904J	11-IC901	EO428360J	6-L704	ET400218J	6-TR667
ED307572	6-D603	EI733745J	7-X1	EO428417N	6-L202	ET400218J	6-TR702
ED307572	6-D604	EI733746J	7-IC1	EO428476J	6-L402	ET400218J	6-TR703
ED307572	6-D605	EJ416590J1	6-P201	EO429900J	6-FL330	ET400218J	6-TR731
ED307572	6-D606	EJ422094J1	8-P833	EO429920J	6-FL601	ET400218J	8-TR832
ED307572	6-D607	EJ422094J1	9-P802	EO725821J	7-L9	ET400218J	9-TR802
ED307572	6-D665	EJ422094J1	9-P803	EO733267J	7-L2	ET400218J	11-TR903
ED307572	6-D750	EJ422169J	4-5	EO733744J	7-L10	ET408902J	7-Q9

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
ET408902J	7-Q16	ML420092N1	3-8	ZS336714	2-6		
ET414816J	6-TR5	ML420097N1	3-12	ZS357946	12-6		
ET415140J	6-TR204	ML420099N1	4-20	ZS358936	2-4		
ET416697J	6-TR211	ML420100N2	4-32	ZS358936	3-45		
ET419014J	6-TR301	ML420102N1	3-9	ZS358936	4-2		
ET422113J	6-PH201	ML420110N3	4-18	ZS362378	12-3		
ET422129J	6-TR202	ML420133N1	4-31	ZS362533	3-40		
ET422154J	6-TR210	ML420168N1	3-33	ZS376521	12-10		
ET428248J	6-TR607	ML420170N	3-47	ZS379350	2-11		
ET428248J	6-TR651	ML420416N3	3-25	ZS383761J	3-5		
ET428248J	6-TR669	ML428102N	3-28	ZS389950J	4-3		
ET428248J	6-TR732	ML428108N	4-12	ZS393515J	12-2		
ET428248J	6-TR752	MR420022N	3-21	ZS403887J	3-18		
ET428248J	7-Q10	MR420106N	4-8	ZS418480J	3-39		
ET428248J	7-Q14	MR420109N	4-9	ZS418616J	3-4		
ET428249J	6-TR670	MT424632N1	3-13	ZS422170J	3-37		
ET428249J	6-TR715	MZ420016N1	3-23	ZS425981	4-4		
ET428249J	6-TR730	MZ420035N	4-23	ZS432843	4-29		
ET428249J	6-TR775	MZ420064N1	3-29	ZS467796	2-10		
ET428361J	10-PH401	MZ420067N	3-31	ZS550708	3-36		
ET428371J	6-TR201	MZ420122N	4-17	ZS563444	2-8		
ET428373J	6-TR207	MZ420123N	4-21	ZW321317	4-36		
ET428400J	6-TR409	MZ420124N2	4-19	ZW324417	3-42		
ET429896J	6-TR602	MZ420132N2	3-32	ZW350839	3-41		
ET429896J	6-TR606	MZ420135N	4-22	ZW389923J	4-28		
ET429896J	6-TR609	MZ420172N2	3-46	ZW395919J	3-20		
ET429896J	6-TR725	MZ424916N02	4-15	ZW418816J	4-26		
ET429897J	6-TR608	MZ424917N01	4-14	ZW424667N	3-14		
ET429897J	6-TR751	MZ428101N	3-6				
ET429898J	6-TR733	MZ428103N	3-30				
ET429899J	6-TR753	SA420497J	12-12				
ET430868J	6-TR101	SC733720J1	13-4				
ET716956	7-Q6	SE429504N	12-14-A				
ET716956	7-Q7	SE429505N	12-14-B				
ET721748J	7-Q8	SE429508N	12-14-C				
ET725820J	7-Q2	SE429514F	12-14-E				
ET725820J	7-Q18	SE429516F	12-14-F				
ET732638J	7-Q4	SE429544F	12-14-D				
ET732638J	7-Q5	SP429104N	12-8				
ET732638J	7-Q15	SP429239J	12-1				
EV389476J	6-VR601	SP733723J	13-5				
EV389479J	6-VR604	SZ420136J	6-2				
EV389482J	6-VR603	SZ426915J	6-1				
EV389489J	6-VR602	SZ429350N	6-3				
EV396023J	6-VR665	SZ429351J	6-4				
EV396023J	6-VR750	VT387394N2	3-3				
EV396023J	6-VR751	VT418700J1	2-5				
EV397570J	7-VR1	ZG420015N1	3-24				
EV429998J	9-VR801	ZG420034N2	4-35				
EV429998J	9-VR802	ZG420036N	4-24				
EW412522J1	12-11	ZG420062N	3-27				
EW427525N	13-2	ZG420071N1	3-44				
EW428334J	12-9-A	ZG420075N	3-38				
EW428335J	12-9-B	ZG420091N	3-17				
EX405691J	8-TH831	ZG420095N	3-7				
HE422168J	3-19	ZG420098N	3-11				
HR416732J	3-35	ZG420101N	4-33				
HZV1182A200A	12-4	ZG420103N1	3-10				
HZ417681J	12-5	ZG420105N	4-7				
MA429080J	2-7-A	ZG420117N	4-16				
MA429081J	2-7-B	ZG420134N1	4-30				
MB420053N	4-10	ZG420166N	3-52				
MI420023N3	3-48	ZG420167N1	3-50				
MI420037N	4-25	ZG420169N1	3-34				
MI420038N3	4-27	ZG425178N	3-51-B				
ML420006N2	3-22	ZG426481N	3-51-A				
ML420033N1	4-34	ZG428110N	4-13				
ML420068N2	3-43	ZG429460J	12-13				
ML420086N1	3-16	ZS321298	2-1				
ML420089N1	3-15	ZS323728	12-7				

ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio orAnalogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BOP	Blank Output Pulse
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comit Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi

ABBREVIATION	EXPLANATION
MOD	MODulator
MRS	Motor ReverSe
NAP	NtscAmusement Pal
NG	Noise Gate
NICAM	Near Instanteneous CompandAudio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	RandomAccess Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	SurfaceAcoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	TunerAUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)

AKAI

MODEL VS-G220, G225, G235SEG
MODEL VS-G420, G425, G435SEG

SCHEMATIC DIAGRAMS AND PC BOARDS

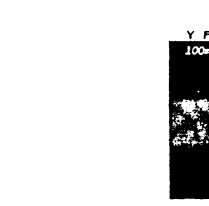
TABLE OF CONTENTS

I. BLOCK DIAGRAMS
1. VIDEO 3
2. SERVO 4
3. OPERATION & SYSCON 5
4. AUDIO 6

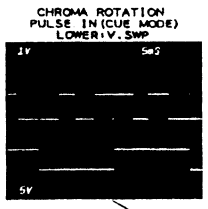
II. SCHEMATIC DIAGRAMS AND PC BOARDS
1. CONNECTION DIAGRAM 7
2. MAIN 1/4 (POWER SUPPLY BLOCK) 8
3. MAIN 2/4 (RF, AUDIO BLOCK) 9
4. MAIN 3/4 (SERVO/SYSCON, OPERATION BLOCK) 10
5. MAIN 4/4 (VIDEO BLOCK) 11
6. CANAL PLUS 14
7. PRE AMP (VS-G220, G225, G235SEG) 17
8. PRE AMP (VS-G420, G425, G435SEG) 18
9. VIF UNIT 21
10. REMOTE CONTROL UNIT (RC-X521F, X524F) 22

III. INFORMATION OF ICs & FLD 23

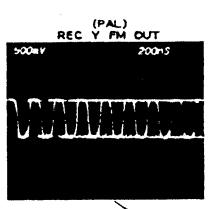
Use these schematic diagrams and PC boards together with the provided service manual.



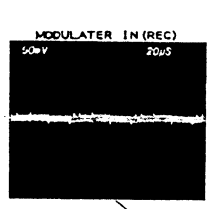
Y FM SIGNAL OUT (PB)



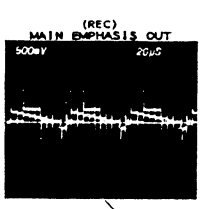
CHROMA ROTATION PULSE IN (CUE MODE)
LOWER : V. SWP



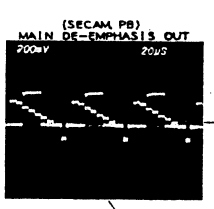
(PAL)
REC Y FM OUT



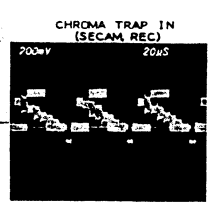
MODULATER IN (REC)



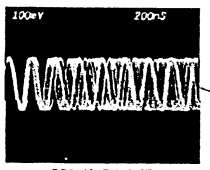
(REC)
MAIN EMPHASIS OUT



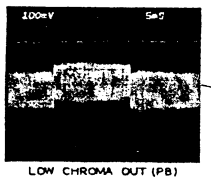
(SECAM PB)
MAIN DE-EMPHASIS OUT



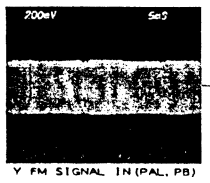
CHROMA TRAP IN
(SECAM, REC)



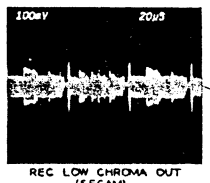
REC Y FM OUT



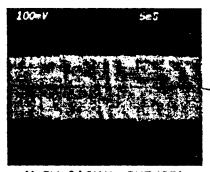
LOW CHROMA OUT (PB)



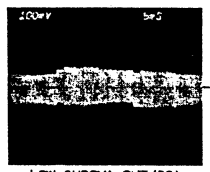
Y FM SIGNAL IN (PAL, PB)



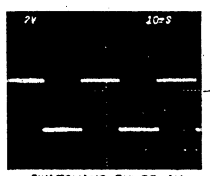
REC LOW CHROMA OUT
(SECAM)



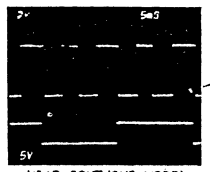
Y FM SIGNAL OUT (PB)



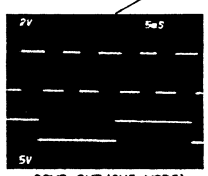
LOW CHROMA OUT (PB)



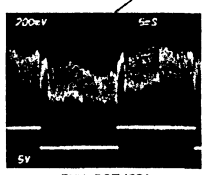
SWITCHING PULSE IN



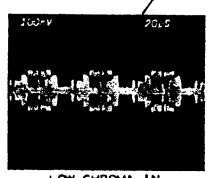
HEAD CONT (CUE MODE)
LOWER : V. SWP



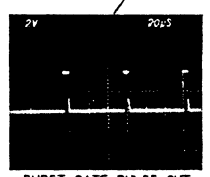
COMP OUT (CUE MODE)
LOWER : V. SWP



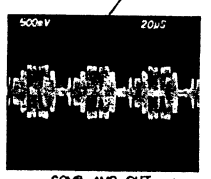
ENV DET (PB)
LOWER : V. SWP



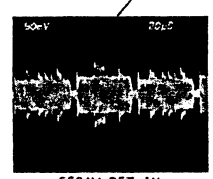
LOW CHROMA IN
(PAL, PB)



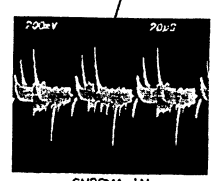
BURST GATE PULSE OUT



COMB AMP OUT
(PAL, PB)



SECAM DET IN
(SECAM, PB)



CHROMA IN
(SECAM, REC)

ICB31 BA7181FS
(2-CH REC/HEAD AMP)

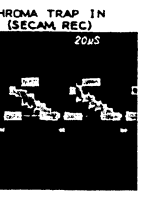
PRE AMP PCB (2 HEAD)

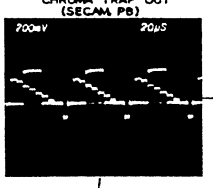
IC801 LA7372A
(4-CH REC/HEAD AMP)

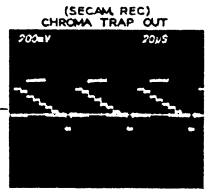
PRE AMP PCB (4 HEAD)

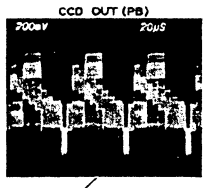
MAIN PCB

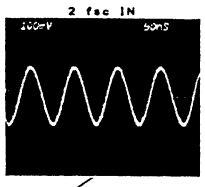
IC680 LA7356
(SECAM DETECTOR)

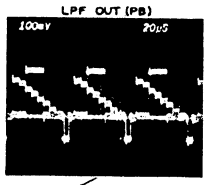


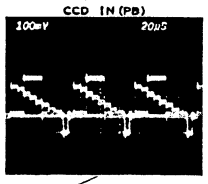


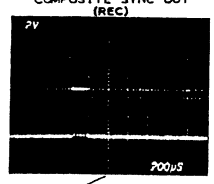












IC401 M37774M5H309GP
(SERVO/SYSTEM CONTROL MI-COM)

IC601 LA7345
(Y/C SIGNAL PROCESSOR)

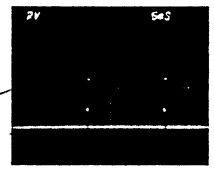
IC602 LC8992
CCD 1H DELAY LINE

IC730 MM1112

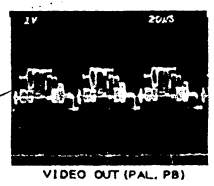
IC750 BA7207S
(SECAM CHROMA SIGNAL PROCESSOR)

IC902 BA7630S
(VIDEO SELECTOR)

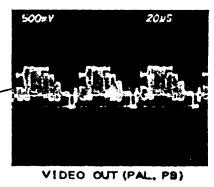
CANAL PLUS PCB



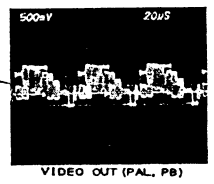
QUASI V-PULSE
(PB, PAUSE)



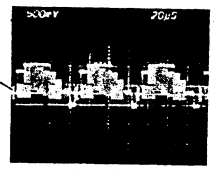
VIDEO OUT (PAL, PB)



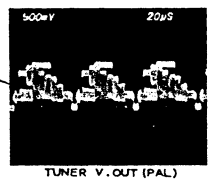
VIDEO OUT (PAL, PB)



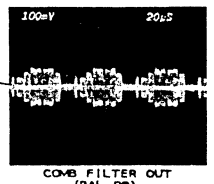
VIDEO OUT (PAL, PB)



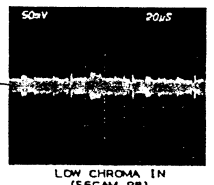
VIDEO IN (PAL)



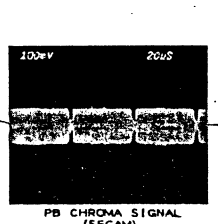
TUNER V.OUT (PAL)



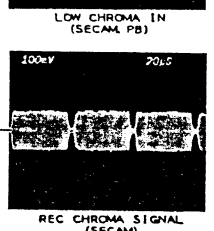
COMB FILTER OUT
(PAL, PB)



LOW CHROMA IN
(SECAM, PB)



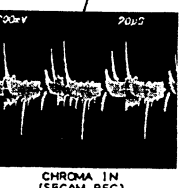
PB CHROMA SIGNAL
(SECAM)



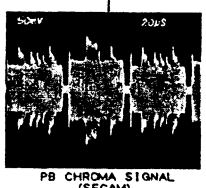
REC CHROMA SIGNAL
(SECAM)

NOTE:
2 HEAD MODEL: VS-G220, G225, G235SEG
4 HEAD MODEL: VS-G420, G425, G435SEG

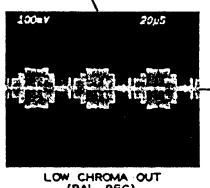
: PB Y SIGNAL LINE
: REC OR E-E Y SIGNAL LINE
: PB CHROMA SIGNAL LINE
: REC OR E-E CHROMA SIGNAL LINE



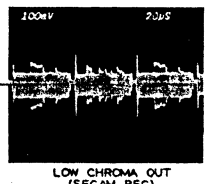
CHROMA IN
(SECAM, REC)



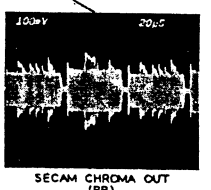
PB CHROMA SIGNAL
(SECAM)



LOW CHROMA OUT
(PAL, REC)



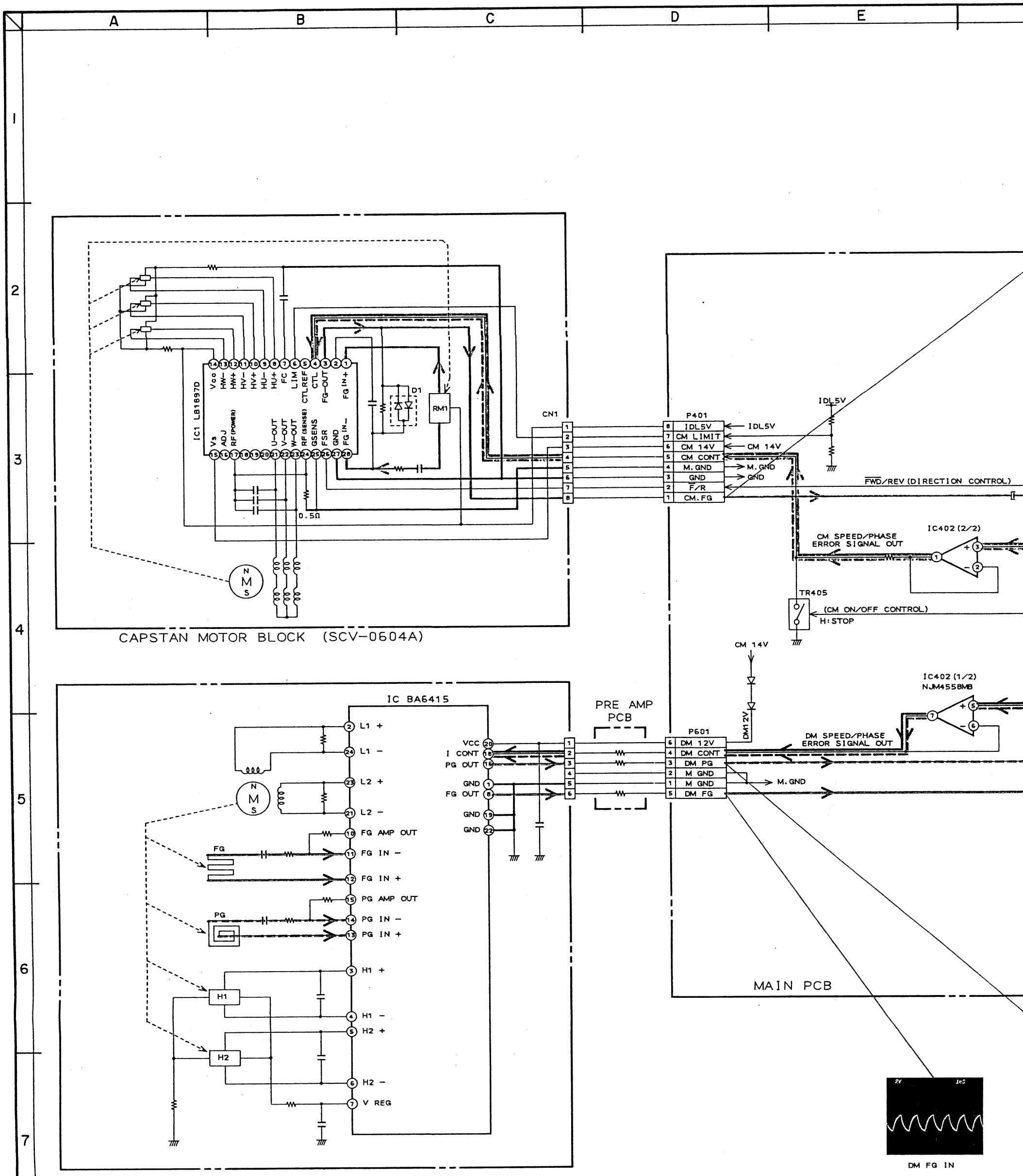
LOW CHROMA OUT
(SECAM, REC)



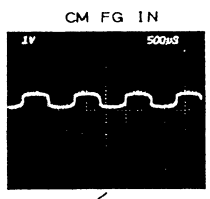
SECAM CHROMA OUT
(PB)

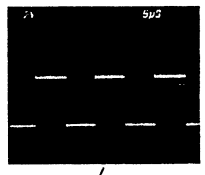
VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
VIDEO
BLOCK DIAGRAM

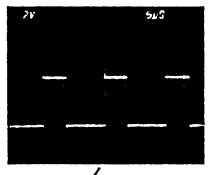
No.4-1 V120751M
A0

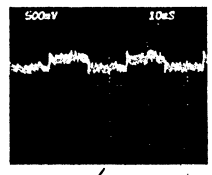


NOTE: PHOTOGRAPHS EXCEPT [REC CTL OUT] WERE TAKEN DURING PB MODE.
EXCEPT [REC CTL OUT], PHOTOGRAPH' S SECOND LINE FROM THE BOTTOM IS DC 0V.





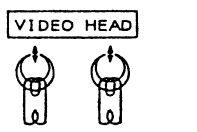




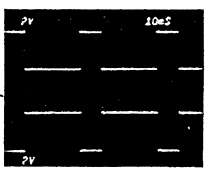
IC401 M37774M5H
(SYSTEM CONTROL & SERVO MI-COM)

FWD/REV (DIRECTION CONTROL)
61 F/R
68 CM FG (SPEED)
IC402 (2/2)
3 CM PWM
LPF
62 CM STOP
IC402 (1/2)
NJM4558MB
4 DM PWM
LPF
66 DM PG (PHASE)
67 DM FG (SPEED)
CM PHASE/SPEED ERROR DETECT
DM PHASE/SPEED ERROR DETECT
(PB) (PHASE)
REC /PB SW
(REC)
25Hz F.F
(AUTO TRACKING CONT)
92 ENV DET
78 CTL-
77 CTL+
WF302
5
6
CONTROL HEAD
V. SYNC SEPA
93 C SYNC
8 C SYNC
FROM IC601 27 PIN (SYNC OUT)
V SWP 14 → TO PRE AMP
CTL GAIN 64
CTL AMP OUT 73
CLAMP R 72
CLAMP F 71
TP401 CTL
TR409
H:ON
CTL AMP GAIN CONTROL
X IN 38
X OUT 39
XC IN 42
XC OUT 43
SYS SO 98
SYS SI 99
SYS CLK 100
SYS RDY 1
X401 16MHz
X402 32.768K

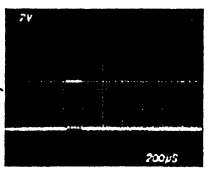
VIDEO HEAD



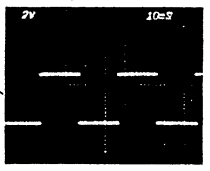
IC801 OR IC831
PRE AMP ← V SWP
2 HEAD MODEL
ENV DET OUT
TR803
SP:ON
TR802
EF
4 HEAD MODEL ONLY
PRE AMP PCB



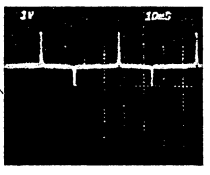
REC CTL OUT
(UPPER:CTL+
LOWER:CTL-)



C SYNC IN

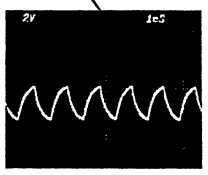


SWITCHING PULSE OUT

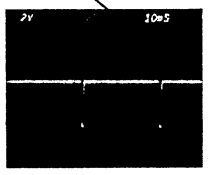


CTL AMP OUT

IC405 μPD16312GB
(OPE MI-COM)
6 OPE SI
5 SYS SO
8 SYS CLK
9 SYS RDY



DM FG IN



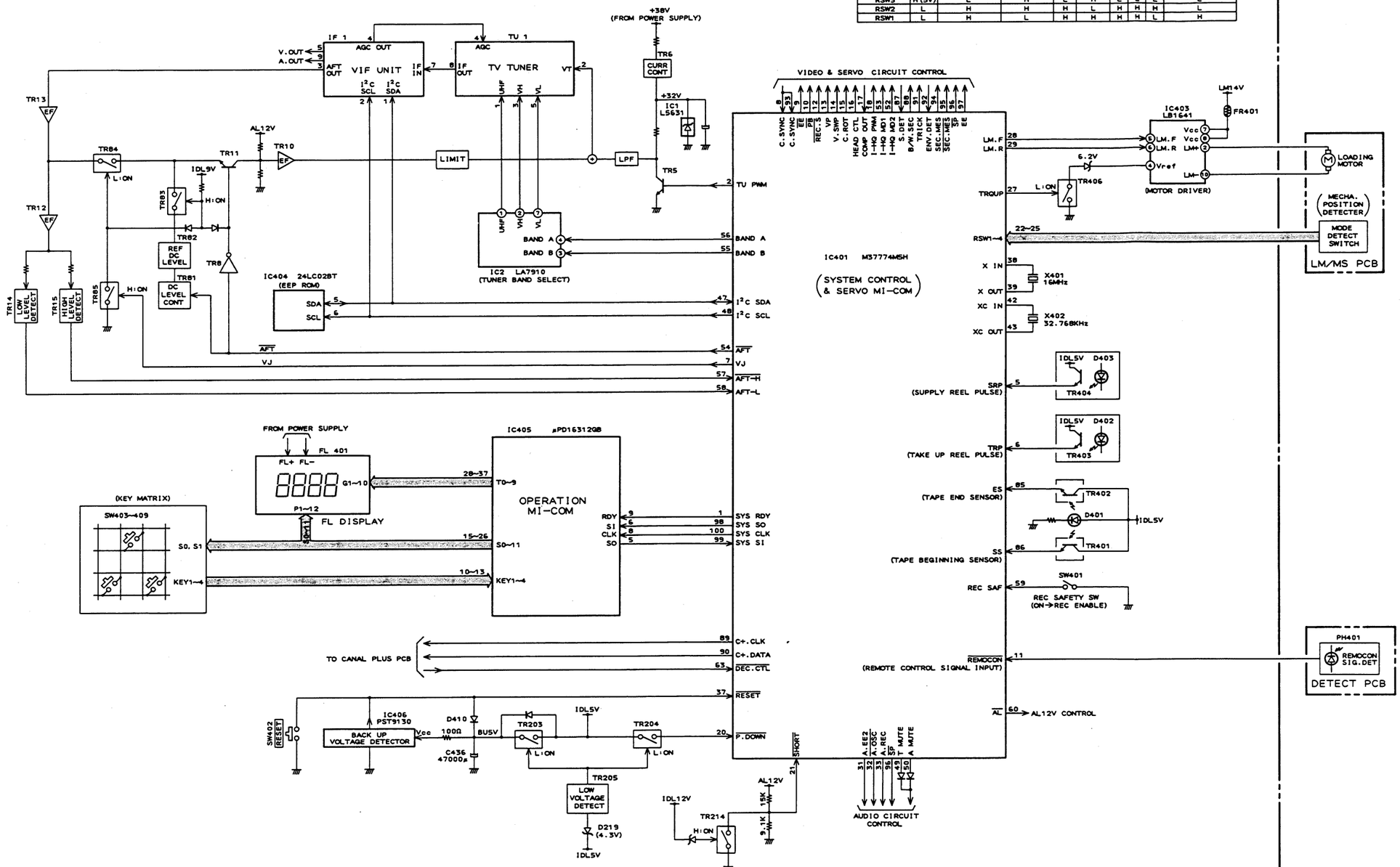
DM PG IN

—— :CAPSTAN MOTOR SPEED CONTROL LINE
- - - - - - :CAPSTAN MOTOR PHASE CONTROL LINE
—— :DRUM MOTOR SPEED CONTROL LINE
- - - - - - :DRUM MOTOR PHASE CONTROL LINE

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
SERVO
BLOCK DIAGRAM
No.4-2 V120752M
A1

MODE SWITCH TRUTH TABLE

OUTPUT \ MODE	EJECT	STOP (TAPE LOADED)	PAUSE/PLAY	PLAY	REVIEW	CUE	FF	REW	POWER OFF (WITH CASSETTE)
RSW4	H (5V)	H	H	H	H	H	L	L	H
RSW3	H (5V)	L	H	L	H	L	L	L	L
RSW2	L	H	H	H	L	H	H	H	L
RSW1	L	H	L	H	H	H	H	L	H

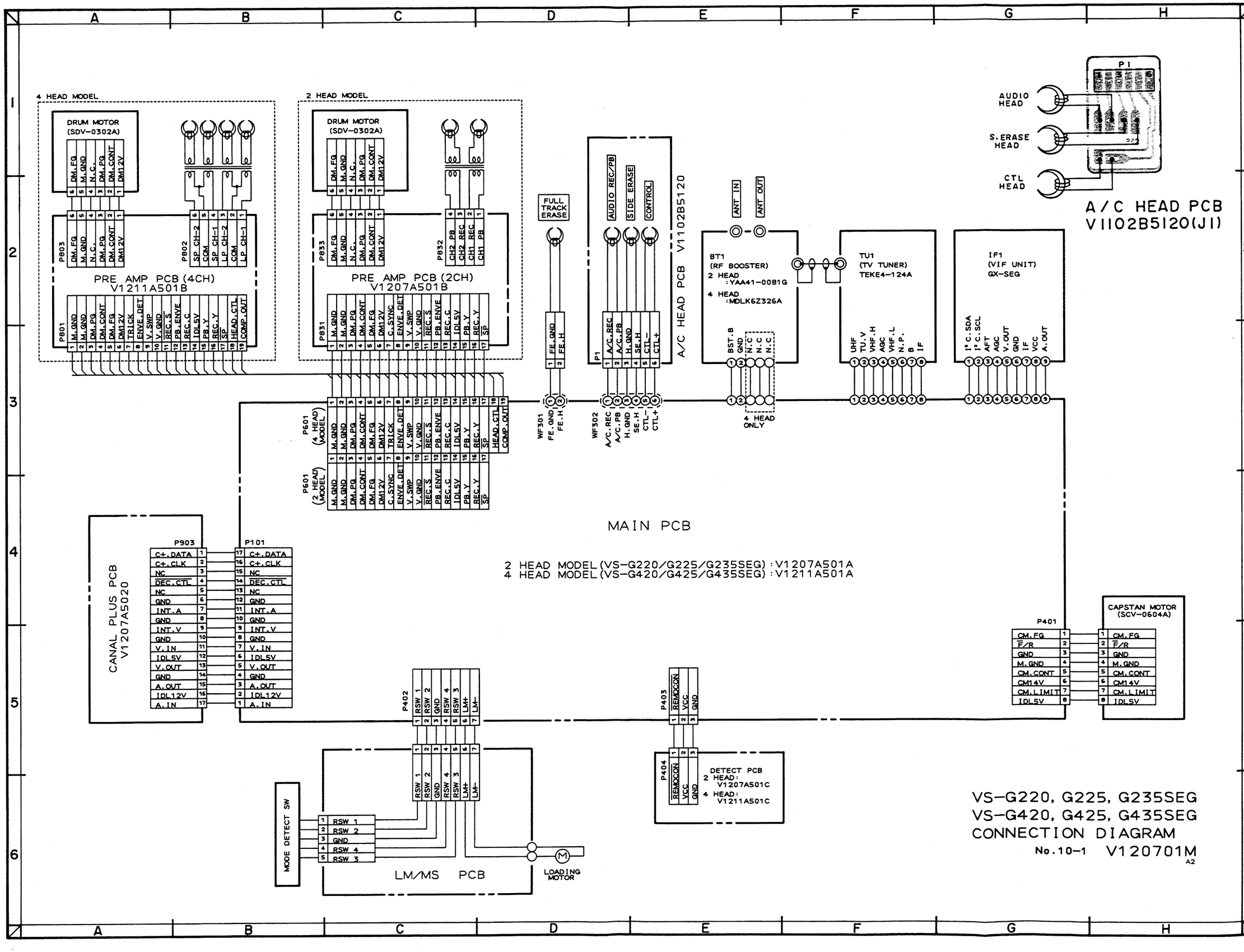


VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
OPERATION & SYSCON BLOCK DIAGRAM

No.4-3 V120753M
A1

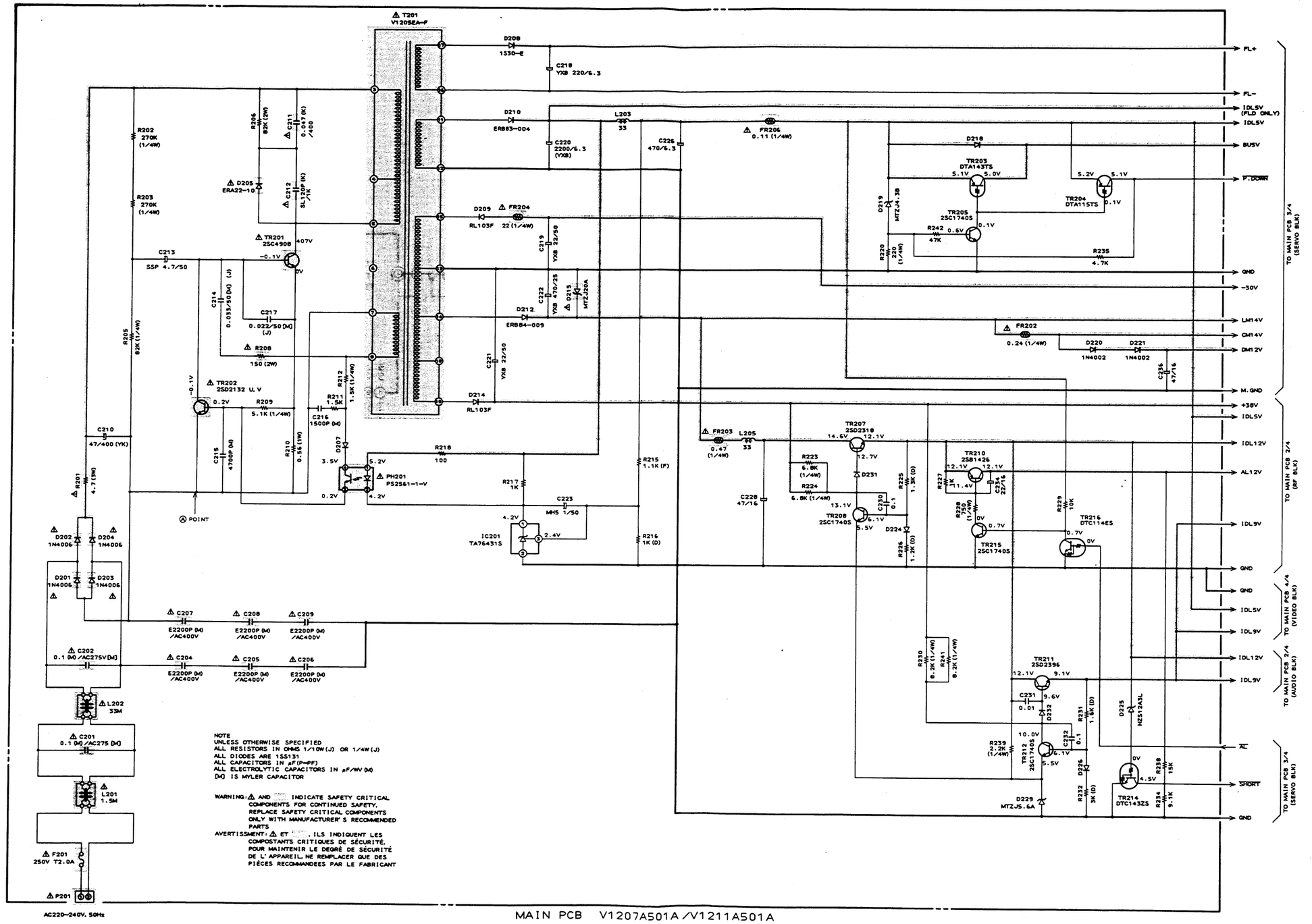
VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
AUDIO
BLOCK DIAGRAM

No.4-4 V120754M
A2



VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
CONNECTION DIAGRAM

No.10-1 V120701M
A2



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J) OR 1/4W (J)
ALL DIODES ARE 1SS131
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
(M) IS MYLER CAPACITOR

WARNING: ⚠ AND [redacted] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET [redacted]. ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

MAIN PCB V1207A501A/V1211A501A

CAUTION:
AS THE PRIMARY SIDE OF THE MAIN PCB'S POWER SECTION (WHITE COLORED PART) CONTAINS HIGH VOLTAGE, THERE IS RISK OF ELECTRIC SHOCK. BE SURE TO USE EXTREME CAUTION.

*INDICATED VOLTAGES WERE MEASURED DURING E-E MODE.
THE DC VOLTMETER'S NEGATIVE INPUT WAS CONNECTED TO THE Ⓐ POINT WHEN THE PRIMARY SECTION WAS MEASURED.
*THE PRIMARY INPUT VOLTAGE WAS AC 220V.

[redacted] B (POWER SUPPLY) LINE

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
MAIN 1/4
(POWER SUPPLY BLK)
SCHEMATIC DIAGRAM

No.10-2 V120702M
A1

*BT1

*BT1 2 HEAD:YAA41-0081G
4 HEAD:MDLK6Z326A

4 HEAD ONLY
BST.B GND N.C N.C N.C
1 2 3 4 5

L1
10 (J)

IC2 LA7910
UHF VHF.H BAND.B BAND.A GND VCC2 VHF.L N.C. VCC1
1 2 3 4 5 6 7 8 9
0V 12.0V 4.9V 0V 13.7V 0.1V 0V 12.1V

C1 0.01 (N)
C2 10/16
C9 0.01 (N)

R23 10K (1/4W)
R24 10K (1/4W)

UHF
TU.V
VHF.H
AGC
VHF.L
N.P.
B
IF

R91 68
R16 18K
R15 10K
R14 10K
R13 10K (D)
C6 0.1 (J) [M]
C5 0.1 (J) [M]
C4 0.1 (J) [M]
C3 0.1 (J) [M]
TR5 2SC2668
2.0V
0.6V
C8 10/50
R10 1K
R11 4.7K

R12 22K (1/4W) 32.2V
IC1 L5631
C7 47/50
TR6 2SA933AS
32.2V
37.6V
37.0V
R17 B2 (1/4W)
JS4
R18 1.1K (1/4W)
R19 33K (1/4W)

R325 10K
5.0
TR30
DTC1

TU1
TEKE4-124A

C14 0.01 (N)
C15 10/16
D3
D4 MTZJ13A
R34 180K
R33 680K
R35 4.7K
C13 1/50
TR10 2SC1740S
12.1V
5.3V
4.7V
R37 330K
R36 10K
R38 270K
TR11 DTC144TS
5.3V
11.0V

IDL9V

R83 33K
R85 27K
R87 1.5K
R88 47K
TR82 2SA933AS
6.0V
0.5V
R82 4.7K
R84 4.7K
5.3V
TR81 DTC114ES
5.2V
0V
R81 68K
C81 47/10
R86 27K
TR83 2SC1740S
5.3V

D81
D82
TR8 DTC114ES
11.0V
0V
R30 10K
R89 22K
TR85 DTC144ES
5.0V
TR84 DTA144TS
5.3V

IF1
VIF.UNIT.GX.SEG

A.OUT
VCC
IF
GND
V.OUT
AGC
AFT
I²C.SCL
I²C.SDA
9 8 7 6 5 4 3 2 1

C86 0.01
R39 22K
R40 120K
R41 100K
5.3V
12.1V
4.7V
TR12 2SC1740S
TR13 2SA933AS
4.7V
D5 MTZJ5.6A
TR15 2SC1740S
0.1V
5.1V
R45 2.2K
R44 1.2K
TR14 2SC1740S
0V
0.6V
R43 8.2K
R42 2.2K
R109 5.6K
TR102 2SA933AS
2.0V
2.6V
R107 470
R102 560
C85 0.01
C49 4.7/25

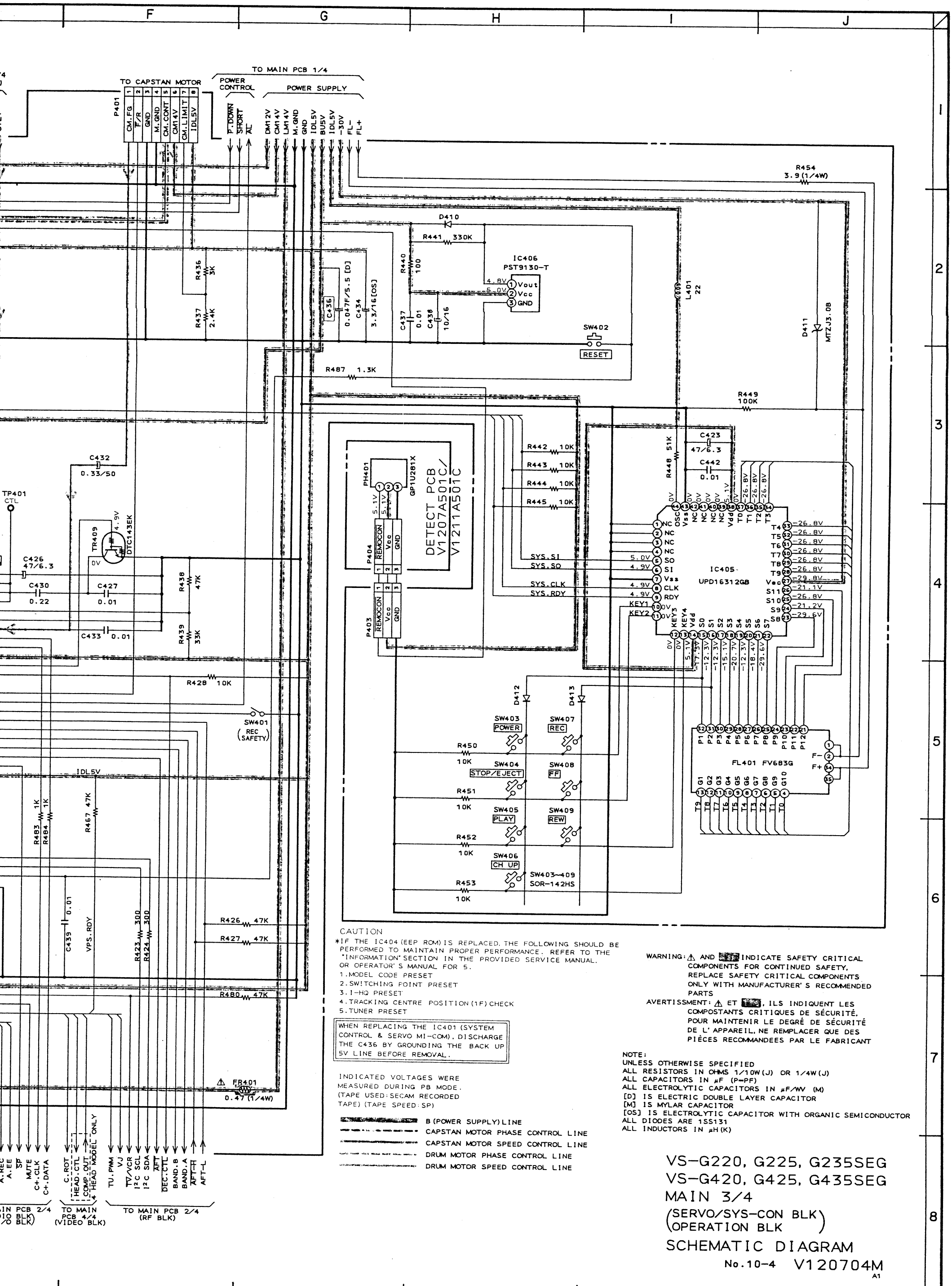
I²C.SDA
I²C.SCL
AFT
AFT-L
AFT-H
VJ
TU.PWM
BAND.B
BAND.A
AL12V
IDL9V
+38V
IDL5V
IDL12V
GND
A.OSC
A.EE
MUTE

MAIN PCB (3/4)
SERVO BLK

MAIN PCB (1/4)
POWER BLK

MAIN PCB (4/4)
VIDEO BLK
V.IN
V.OUT
TO CANAL PLUS PCB P903
P101
A.IN
IDL12V
A.OUT
GND
V.OUT
IDL5V
V.IN
GND
INT.V
GND
INT.A
GND
NC
DEC.CTL
NC
C+.CLK
C+.DATA
C107 4700P
C106 4700P
R100 390
R101 51K
TR101 DTC114EKA
0V
IDL9V 9.1V
0.2V
0.1V
R321 2.2K
TR301 2SC1741S
R325 10K
5.0V
TR302 DTC144TS
L352 100
C316 47/16
C332 1/50
R318 30K
C313 0.018 (J) [M]
R317 180
R315 4.7K (F)
R314 3K (F)
R313 15K
R312 22K
C312 0.027 (J) [M]
R316 430
4 HEAD ONLY
C311 10/16
C315 10/16
C314 4.7/25
12.1V
12.0V
5.5V
1.5V
5.4V
C351 100/10
C352 3300P
C353 8200P
R351 8.2K
TR351 2SC1740S
FL330 125-8121-41
C354 8200P [P.P CAP]
C318 510P
R323 33K
LA7285M
IC301
REC/EE
MUTE
EE/PB
LP/SP
RIPPLE FILTER
REC AMP
LINE AMP
ALC
ALC DET
EQ AMP
BUF
SP LP SP LP
C301 1800P(K)
R302 360
C303 0.47/50
C305 33/6.3
R303 120
C302 1200P(K)
R301 36K
C304 0.012 (J) [M]
R304 330K
R305 10K
R306 2.4K (F)
R307 4.7K (F)
R308 1M
C306 0.1/50
C307 22/16
C331 0.01
C309 0.1/50
R309 75K
R310 8.2K
4.2V
0.5V
0.3V
A/C.REC
A/C.PB
IDL12V
GND
A.OSC
A.EE
MUTE
SP
A.REC
DEC.CTL
C+.CLK
C+.DATA
CTL+
CTL-
FE.GND
FE.H
H.GND
SE.H
WF301
WF302
MAIN PCB (3/4) SERVO BLK
TO FE HEAD
TO A/C HEAD PCB P1
MAIN PCB
2 HEAD MODEL : V1207A501A
4 HEAD MODEL : V1211A501A
: B (POWER SUPPLY) LINE
: AUDIO PB SIGNAL LINE
: AUDIO REC SIGNAL LINE
: VIDEO PB SIGNAL LINE
: VIDEO REC SIGNAL LINE
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J) OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF /WV (M)
ALL DIODES ARE 1SS131T
ALL INDUCTORS IN μH (K)
[M] IS MYLAR CAPACITOR
INDICATED VOLTAGES WERE MEASURED DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)
VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
MAIN 2/4
(RF, AUDIO BLK)
SCHEMATIC DIAGRAM
No.10-3 V120703M
A1

TO MAIN PCB 4/4 (VIDEO BLK)
TO MAIN PCB 2/4 (AUDIO BLOCK)
EE
SP
SEC.MES
SEC.MES
C.SYNC
ENV.DET
TRICK
B/W..SEC
S-DET
DM.CONT
M.GND
DM.FG
DM.PG
DM12V
CTL-
CTL+
P401
CM.FG
IC402
NJM4558MB
TR405
DTC144ES
C401 0.1
R432 2.2K
R456 10K
C406 0.01
C407 0.01
C402 2200P
C403 2200P
C404 0.047[M]
C405 0.047[M]
R401 22K
R402 10K
R403 120K
R404 56K
R425 4.7K
R468 47K
R469 47K
C435 3.3/16
C448 0.1
R433 10K
C424 2200P
C432 0.33/50
TP401 CTL
R434 560
TR409 DTC143EK
C425 10/16
C426 47/6.3
R435 100
C428 10/6.3
C429 10/6.3
C430 0.22
C427 0.01
C431 47/6.3
C433 0.01
IC401
M37774M5H309GP
GXSYSS2
SYS.CLK
SYS.SI
SYS.SO
SYS.RDY
TU.PWM
CM.PWM
DM.PWM
SRP
TRP
VJ
C.SYNC
EE
PB
REMOCON
REC.S
VP
V.SWP
C.ROT
HEAD.CTL
COMP.OUT
I-HQ.PWM
VPS.RDY
P.DOWN
SHORT
RSW4
RSW3
RSW2
RSW1
Vcc
TRQUP
LM.F
LM.R
NC
AMP.Vss
CTL.Vss
CTL-
CTL+
CTL+SWOUT
CTLAMP.IN
AMP.C
CTLAMP.OUT
CLAMPR
CLAMPF
AMP.Vref.IN
AMP.Vref.OUT
CM.FG
DM.FG
DM.PG
AMP.Vcc
CTL.GAIN
DEC.CTL
CM.STOP
F/R
AL
REC.SAF
AFT-L
AFT-H
BAND.A
BAND.B
AFT
I-HQ.MD1
I-HQ.MD2
SYNC.MON
A.MUTE
T.MUTE
I²C.SCL
I²C.SDA
INT/EXT
TV/VCR
Xo out
Xo in
CLK.SEL
X OUT
X IN
RESET
NUA
A.EE
A.REC
A.OSC
EE2
R405 47K
R406 47K
R407 47K
R408 47K
R472 47K
R481 47K
R473 47K
R417 1M
R418 1K
R419 10M
R420 330K
X401 APS-1011A 16MHz
X402 C-002RX 32.768KHz
C412 CH15P
C413 CH1BP
C414 CH15P
C415 CH1BP
D405
D406
C418 1000P
R482 10K
R474 47K
IC404 24LC02BT/SN
C439 0.01
VPS.RDY
IDL5V
R409 47K
R486 51K
R421 10K
R422 10K
R483 1K
R484 1K
R467 47K
TO MAIN PCB 4/4 (VIDEO BLK)
EE
PB
REC.S
VP
V.SWP
I-HQ.MD1
I-HQ.MD2
I-HQ.PWM
TR401 PT493F
D401 GL528VTB
TR402 PT493F
K1
K2
TR403 PT4800
D402 GL4800
D403 GL4800
TR404 PT4800
TRP
SRP
SS
ES
R410 10K
C408 1000P
R411 150 (1/4W)
C409 0.1
R412 10K
R413 15K
C410 0.01
R414 130 (1/4W)
R416 15K
C411 0.01
L402 0.33
IC403 LB1641
GND
LM+
P1
V ref
LM.F
LM.R
VCC1
VCC2
P2
LM-
R429 47K
R430 47K
TR406 2SA933AS OR 2PA733
D404 MTZJ6.2C
C419 0.01
C420 0.01
C421 0.1
A.OSC
A.REC
A.EE
SP
MUTE
C+.CLK
C+.DATA
C.ROT
HEAD.CTL
COMP.OUT
4 HEAD MODEL ONLY
TU.PWM
VJ
TV/VCR
TO MAIN PCB 2/4 (AUDIO BLK & I/O BLK)
TO MAIN PCB 4/4 (VIDEO BLK)
P402
RSW1
RSW2
GND
RSW4
RSW3
LM+
LM-
TO LM/MS PCB
MAIN PCB V1207A501A /V1211A501A



CAUTION

*IF THE IC404 (EEP ROM) IS REPLACED, THE FOLLOWING SHOULD BE PERFORMED TO MAINTAIN PROPER PERFORMANCE. REFER TO THE "INFORMATION" SECTION IN THE PROVIDED SERVICE MANUAL, OR OPERATOR'S MANUAL FOR 5.

1. MODEL CODE PRESET
2. SWITCHING POINT PRESET
3. 1-HQ PRESET
4. TRACKING CENTRE POSITION (1F) CHECK
5. TUNER PRESET

WHEN REPLACING THE IC401 (SYSTEM CONTROL & SERVO MI-COM), DISCHARGE THE C436 BY GROUNDING THE BACK UP 5V LINE BEFORE REMOVAL.

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: SECAM RECORDED TAPE) (TAPE SPEED: SP)

B (POWER SUPPLY) LINE
CAPSTAN MOTOR PHASE CONTROL LINE
CAPSTAN MOTOR SPEED CONTROL LINE
DRUM MOTOR PHASE CONTROL LINE
DRUM MOTOR SPEED CONTROL LINE

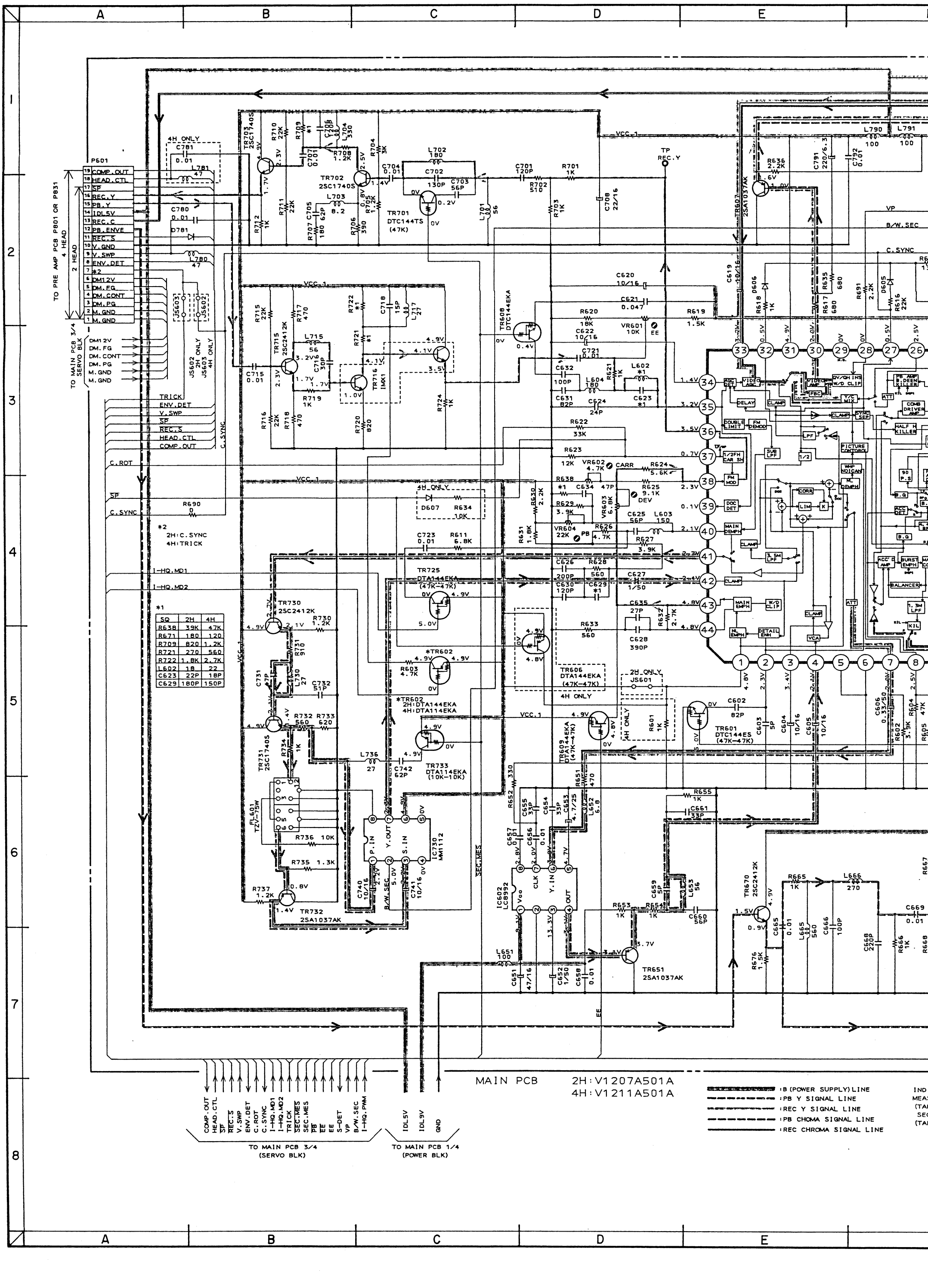
WARNING: ⚠ AND [▬] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

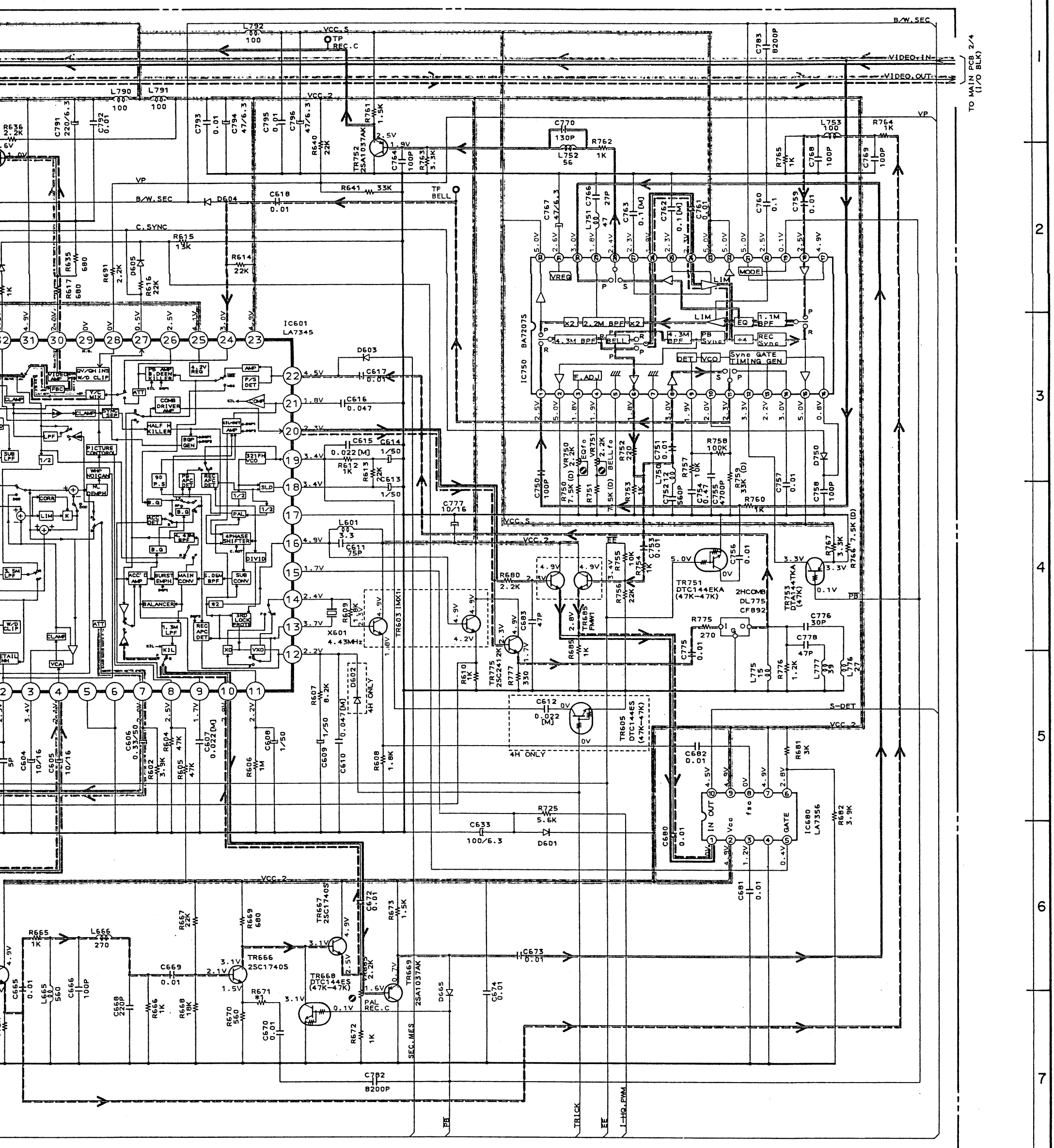
AVERTISSMENT: ⚠ ET [▬], ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J) OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
[D] IS ELECTRIC DOUBLE LAYER CAPACITOR
[M] IS MYLAR CAPACITOR
[OS] IS ELECTROLYTIC CAPACITOR WITH ORGANIC SEMICONDUCTOR
ALL DIODES ARE 1SS131
ALL INDUCTORS IN μH (K)

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
MAIN 3/4
(SERVO/SYS-CON BLK) (OPERATION BLK)
SCHEMATIC DIAGRAM

No.10-4 V120704M
A1


P601
TO PRE AMP PCB P801 OR P831
4 HEAD
2 HEAD
TO MAIN PCB 3/4
SERVO BLK
4H ONLY
2H ONLY
JS602
JS603
TRICK
ENV.DET
V.SWP
SP
REC.S
HEAD.CTL
COMP.OUT
C.ROT
C.SYNC
I-HQ.MD1
I-HQ.MD2
SEC.MES
VCC.1
EE
TP
REC.Y
VP
B/W.SEC
C.SYNC
TR702 2SC1740S
TR703 2SC1740S
TR715 2SC2412K
TR730 2SC2412K
TR731 2SC1740S
TR732 2SA1037AK
TR733 DTA114EKA (10K-10K)
TR725 DTA144EKA (47K-47K)
TR701 DTC144TS (47K)
TR608 DTC144EKA
TR606 DTA144EKA (47K-47K)
TR609 DTA144EKA (47K-47K)
TR601 DTC144ES (47K-47K)
TR607 2SA1037AK
TR670 2SC2412K
TR651 2SA1037AK
*TR602
*TR602 2H:DTA144EKA 4H:DTA114EKA
IC730 MM1112
IC602 LC8992
FL601 TZV-75W
*1
SQ 2H 4H
R638 39K 47K
R671 180 120
R709 820 1.2K
R721 270 560
R722 1.8K 2.7K
L602 18 22
C623 22P 18P
C629 180P 150P
*2
2H:C.SYNC
4H:TRICK
MAIN PCB 2H:V1207A501A 4H:V1211A501A
:B (POWER SUPPLY) LINE
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHOMA SIGNAL LINE
:REC CHROMA SIGNAL LINE
TO MAIN PCB 3/4 (SERVO BLK)
TO MAIN PCB 1/4 (POWER BLK)
COMP.OUT HEAD.CTL SP REC.S V.SWP ENV.DET C.ROT C.SYNC I-HQ.MD1 I-HQ.MD2 TRICK SEC.MES SEC.MES PB EE EE S-DET VP B/W.SEC I-HQ.PWM
IDL5V IDL9V GND



: B (POWER SUPPLY) LINE
: PB Y SIGNAL LINE
: REC Y SIGNAL LINE
: PB CHOMA SIGNAL LINE
: REC CHROMA SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE USED: SECAM COLOUR BAR TAPE)
(TAPE SPEED: SP)

IN ORDER TO SHORTEN THE MODEL NUMBER, 2 HEAD MODELS (VS-G220, G225, G235SEG) ARE ABBREVIATED TO "2H" AND 4 HEAD MODELS (VS-G420, G425, G435SEG) TO "4H" IN THIS DIAGRAM.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J) OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
[M] IS MYLER CAPACITOR
ALL DIODES ARE 1SS131T
ALL INDUCTORS IN μH (J)

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
MAIN 4/4
(VIDEO BLK)
SCHEMATIC DIAGRAM

No.10-5 V120705M
A1

TO DECODER

P902 (BLUE)

R901 680

R902 3K

R903 3K

C901 100P

C902 6800P

C903 680P

C904 100P

C905 100P

R904 75

R905 68

R906 680

C906 100P

R940 100K

C907

IC901
BA7631F

6.1V
7.0V
6.2V
12.1V
6.2V
6.2V
7.0V
6.1V
7.0V
6.1V
0V
6.2V
6.2V

C912 0.01

C913 47/16

C914 1/50

C918 1/50

C917 1/50

C916 1/50

C915 1/50

C919 47/6.3

C920 0.01

L901 100

L902 100

L903 100

R911 10K

R912 22K

R913 22K

R914 22K

C927 0.01

C926 47/16

5.1V
0V

TR901
DTC144ES
(47K-47K)

P903

17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
A.IN	IDL12V	A.OUT	GND	V.OUT	IDL5V	V.IN	GND	INT.V	GND	INT.A	GND	N.C	DECCTL	N.C	C+.CLK	C+.DATA

TO MAIN PCB(2/4) P101
(RF/AUDIO BLK)

CANAL PLUS PCB VI207A5020

: B (POWER SUPPLY) LINE
: PB AUDIO SIGNAL LINE
: REC/EE AUDIO SIGNAL LI
: PB VIDEO SIGNAL LINE
: REC/EE VIDEO SIGNAL LI

TO TV MONITOR

P901 (BLACK)

R906 680

R907 3K

R908 3K

C906 100P

R940 100K

C907 8200P

C908 680P

C909 100P

C910 100P

R909 75

R910 75

C911 470/6.3

C919 47/6.3

C920 0.01

IC902
BA7630S

C921 1/50

C922 1/50

C923 1/50

C924 1/50

2.4V
5.1V
2.5V
2.0V
2.4V
7.0V
0V
7.0V
1.4V

0.9V
0V
4.9V
0.1V
0.8V
0V
0V
0.8V
7.0V
0V
1.4V

BIAS
BUFF
SHIFT REGISTER
CONTROL LOGIC
LOGIC
LATCHES
SW1 SW2 SW3 SW4 SW12

L902 100

R916 4.7K

12.1V
1.1V
12.1V

R918 22K

5.1V
2.5V
1.8V

TR903
2SC1740S

TR902
DTA144ES
(47K-47K)

C925 10/16

D901
1SS131T

R917 910

R912 22K

R913 22K

R914 22K

R915 22K

R919 22K

C928 47/6.3

R920 1K

C926 47/16

R921 1.2K

R922 1.2K

2.3V
1.4V

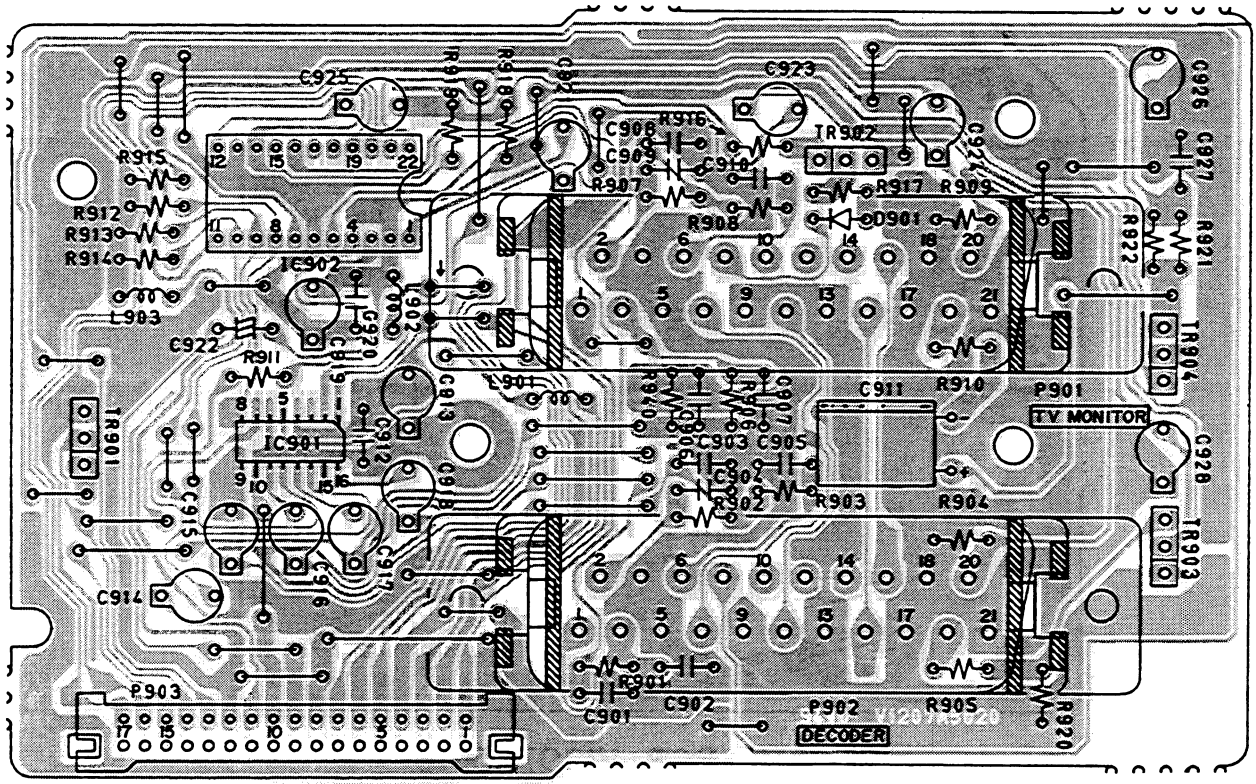
TR904
2SA933AS

V1207A5020

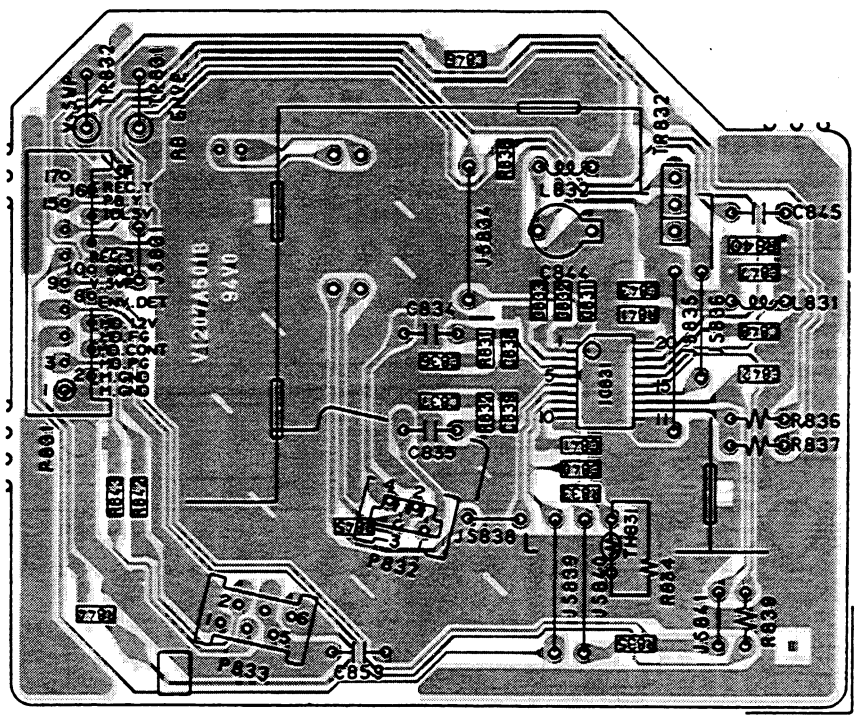
B (POWER SUPPLY) LINE
PB AUDIO SIGNAL LINE
REC/EE AUDIO SIGNAL LINE
PB VIDEO SIGNAL LINE
REC/EE VIDEO SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)
INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
CANAL PLUS
SCHEMATIC DIAGRAM
No.10-6 V120706M
A2

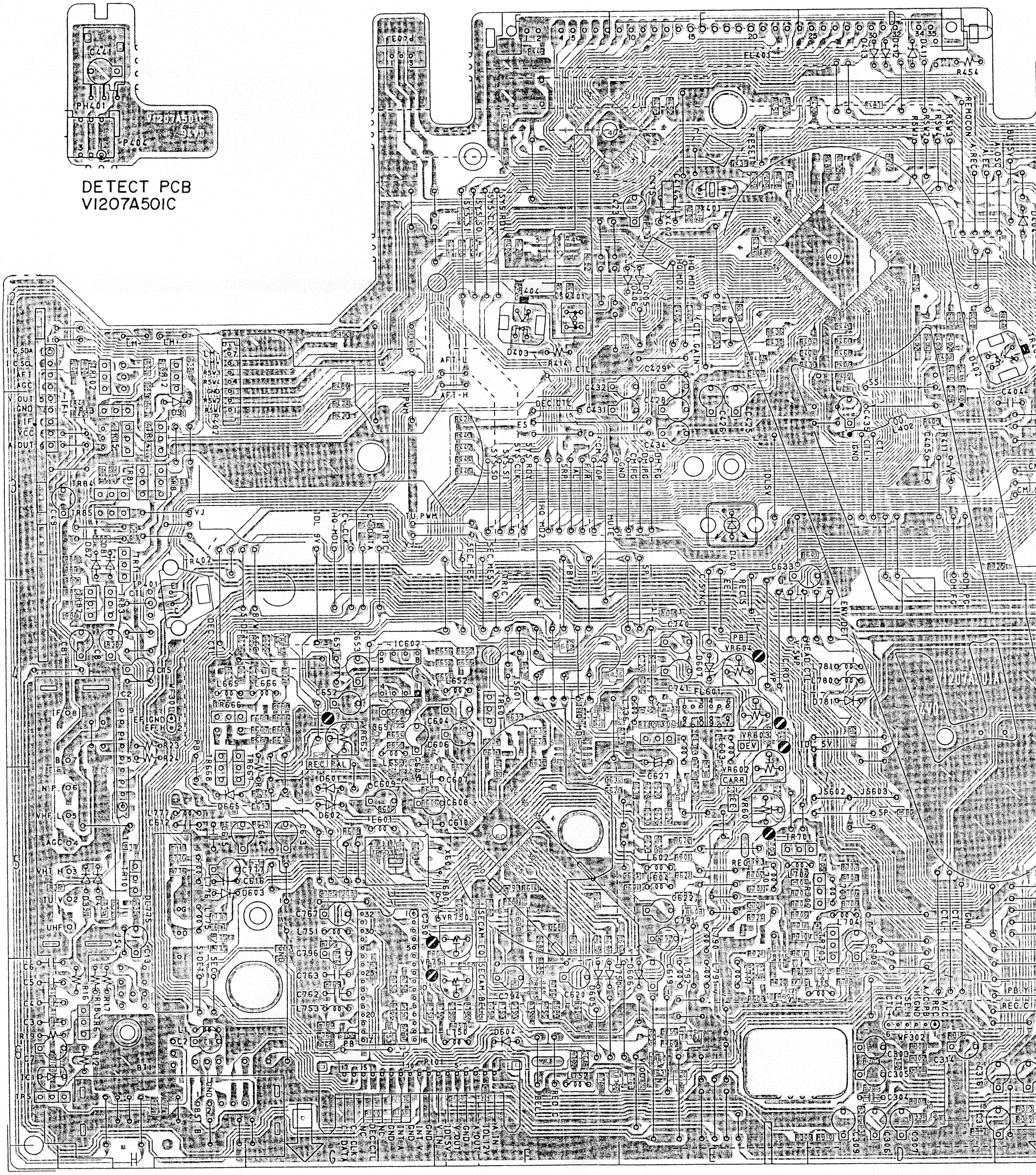


CANAL PLUS PCB V1207A5020



PRE AMP PCB VI207A501B

DETECT PCB
V1207A501C



PRINCIPAL PARTS LOCATION

ICs

IC1	H6
IC2	H4,5
IC201	B3
IC301	D6
IC401	D2
IC402	C3
IC403	C1,2
IC404	F2
IC405	E,F1
IC406	C1
IC601	F5
IC602	G4
IC680	F5
IC730	F4
IC750	G5,6

TRANSISTORs

TR5	H6
TR6	H6
TR8	H3
TR10	H5
TR11	H3
TR12	H2
TR13	H3
TR14	H3
TR15	H3
TR81	H3
TR82	H4
TR83	H4
TR84	H3
TR85	H3
TR101	E6
TR102	H2
TR201	A4
TR202	A5
TR203	C2
TR204	C2
TR205	C2
TR207	A2
TR208	A2
TR210	B2
TR211	B2
TR212	B2
TR214	B3
TR215	B2
TR216	B2
TR301	B5
TR302	B,C5
TR351	B6
TR401	B4
TR402	H4
TR403	C2
TR404	F2
TR405	C3
TR406	C2
TR409	E2
TR601	F4
TR602	E6
TR603	G5
TR607	E6
TR608	E5
TR609	F4
TR651	G4
TR666	H4
TR667	H4,5
TR668	H4,5
TR669	G4,5
TR670	G4
TR685	F6
TR701	D,E5
TR702	D5
TR703	D5,6
TR715	D6
TR716	E6
TR725	E,F4
TR730	E5
TR731	E4
TR732	F4
TR733	E4
TR751	E6
TR752	E,F6
TR753	G6
TR775	G5

CONNECTORs

P101	F,G6
P201	A,B6
P401	B4
P402	H2,3
P403	G1
P601	C6

WIREs

WF301	H4
WF302	D6

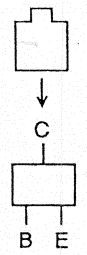
TEST POINTs

TP401	H4
BELL	F6
REC.C	F6
REC.Y	E5

TR685

TR603,716

SINGLE CHIP TRANSISTOR

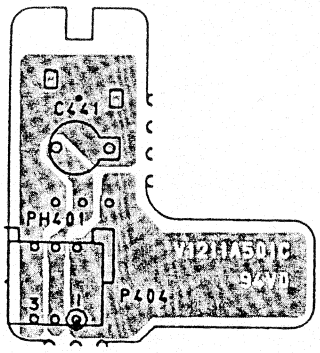


MAIN PCB V1207A501A

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



DETECT PCB
V1211A501C

MAIN PCB V1211A501A

CAUTION:
AS THE PRIMARY SIDE OF THE MAIN PCB'S POWER SECTION (WHITE COLORED PART) CONTAINS HIGH VOLTAGE, THERE IS RISK OF ELECTRIC SHOCK. BE SURE TO USE EXTREME CAUTION.

PRINCIPAL PARTS LOCATION

ICs

IC1	H6
IC2	H4,5
IC201	B3
IC301	D6
IC401	D2
IC402	C3
IC403	C1,2
IC404	F2
IC405	E,F1
IC406	C1
IC601	F5
IC602	G4
IC680	F5
IC730	F4
IC750	G5,6

TRANSISTORs

TR5	H6
TR6	H6
TR8	H3
TR10	H5
TR11	H3
TR12	H2
TR13	H3
TR14	H3
TR15	H3
TR81	H3
TR82	H4
TR83	H4
TR84	H3
TR85	H3
TR101	E6
TR102	H2
TR201	A4
TR202	A5
TR203	C2
TR204	C2
TR205	C2
TR207	A2
TR208	A2
TR210	B2
TR211	B2
TR212	B2
TR214	B3
TR215	B2
TR216	B2
TR301	B5
TR302	B,C5
TR351	B6
TR401	B4
TR402	H4
TR403	C2
TR404	F2
TR405	C3
TR406	C2
TR409	E2
TR601	F4
TR602	E6
TR603	G5
TR605	H5
TR606	E,F4
TR607	E6
TR608	E5
TR609	F4
TR651	G4
TR666	H4
TR667	H4,5
TR668	H4,5
TR669	G4,5
TR670	G4
TR685	F6
TR701	D,E5
TR702	D5
TR703	D5,6
TR715	D6
TR716	E6
TR725	E,F4
TR730	E5
TR731	E4
TR732	F4
TR733	E4
TR751	E6
TR752	E,F6
TR753	G6
TR775	G5

CONNECTORs

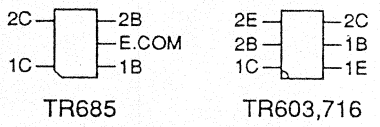
P101	F,G6
P201	A,B6
P401	B4
P402	H2,3
P403	G1
P601	C6

WIREs

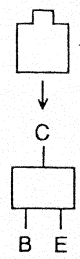
WF301	H4
WF302	D6

TEST POINTs

TP401	H4
BELL	F6
REC.C	F6
REC.Y	E5



SINGLE CHIP TRANSISTOR

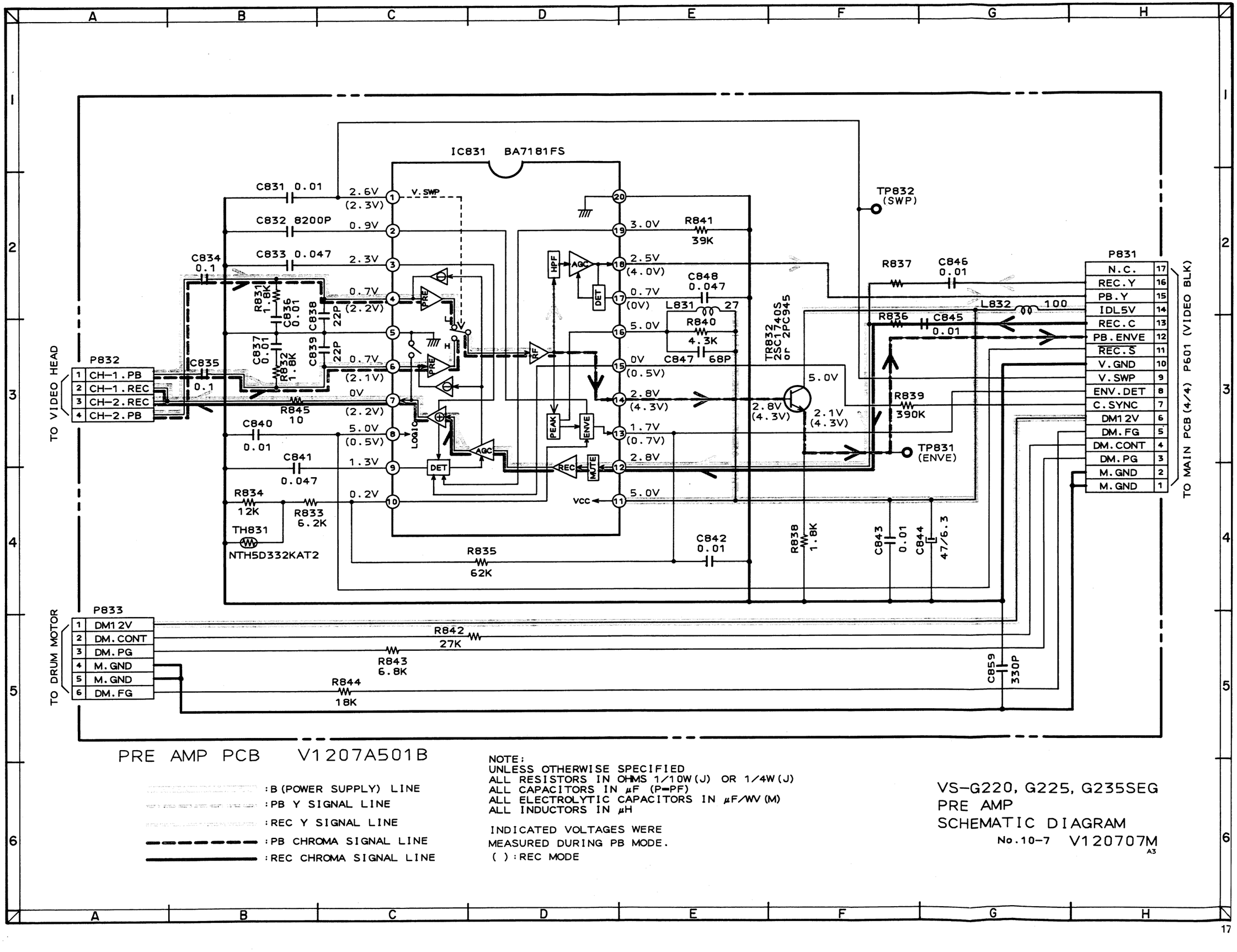


VI211A501A

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



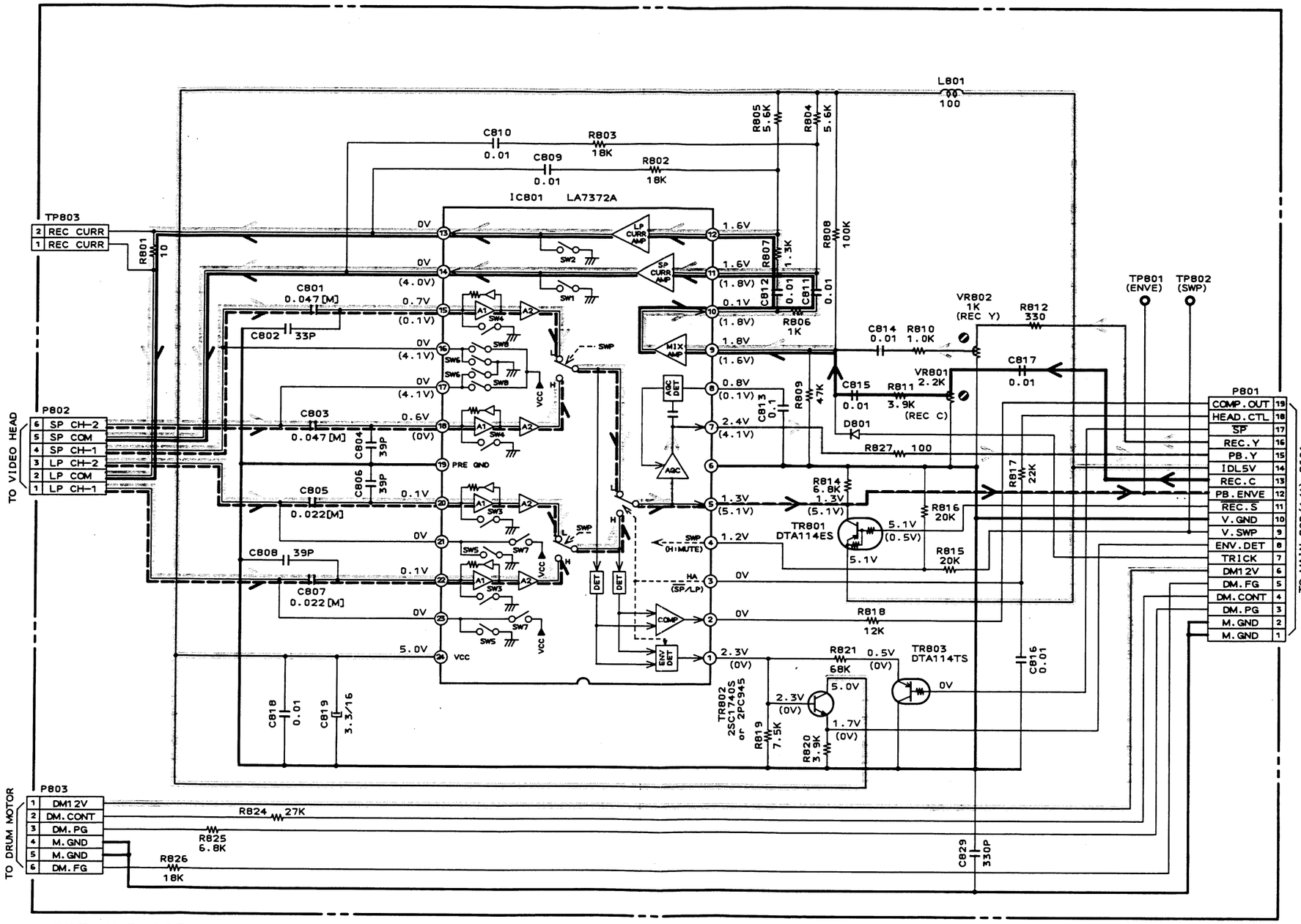
PRE AMP PCB V1207A501B

:B (POWER SUPPLY) LINE
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J) OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE

VS-G220, G225, G235SEG
PRE AMP
SCHEMATIC DIAGRAM
No.10-7 V120707M
A3



PRE AMP PCB V1211A501B

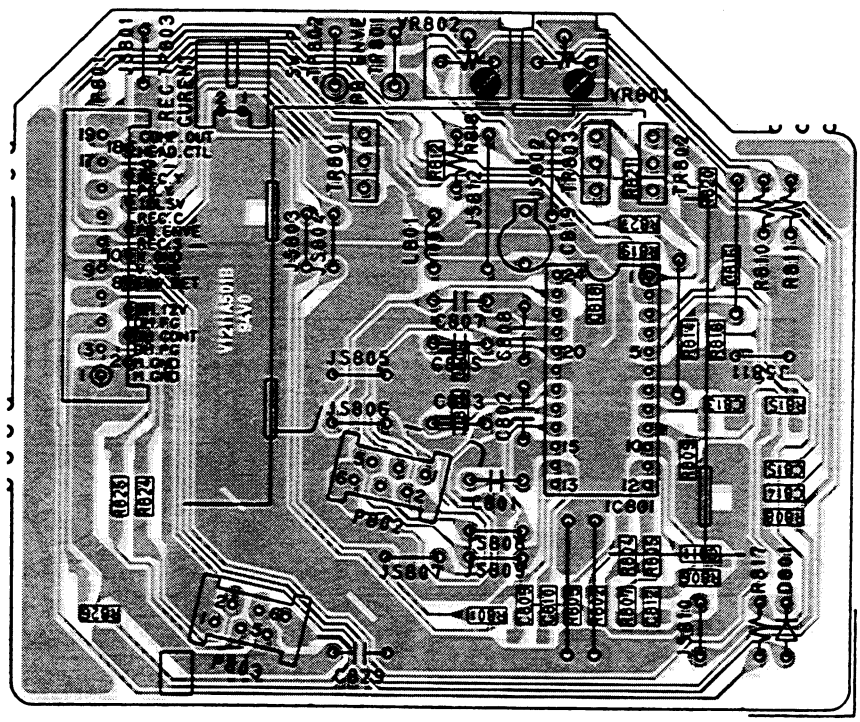
:B (POWER SUPPLY) LINE
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W(J) OR 1/4W(J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV(M)
ALL INDUCTORS IN μH
ALL DIODES ARE 1SS131
[M] IS MYLAR CAPACITORS

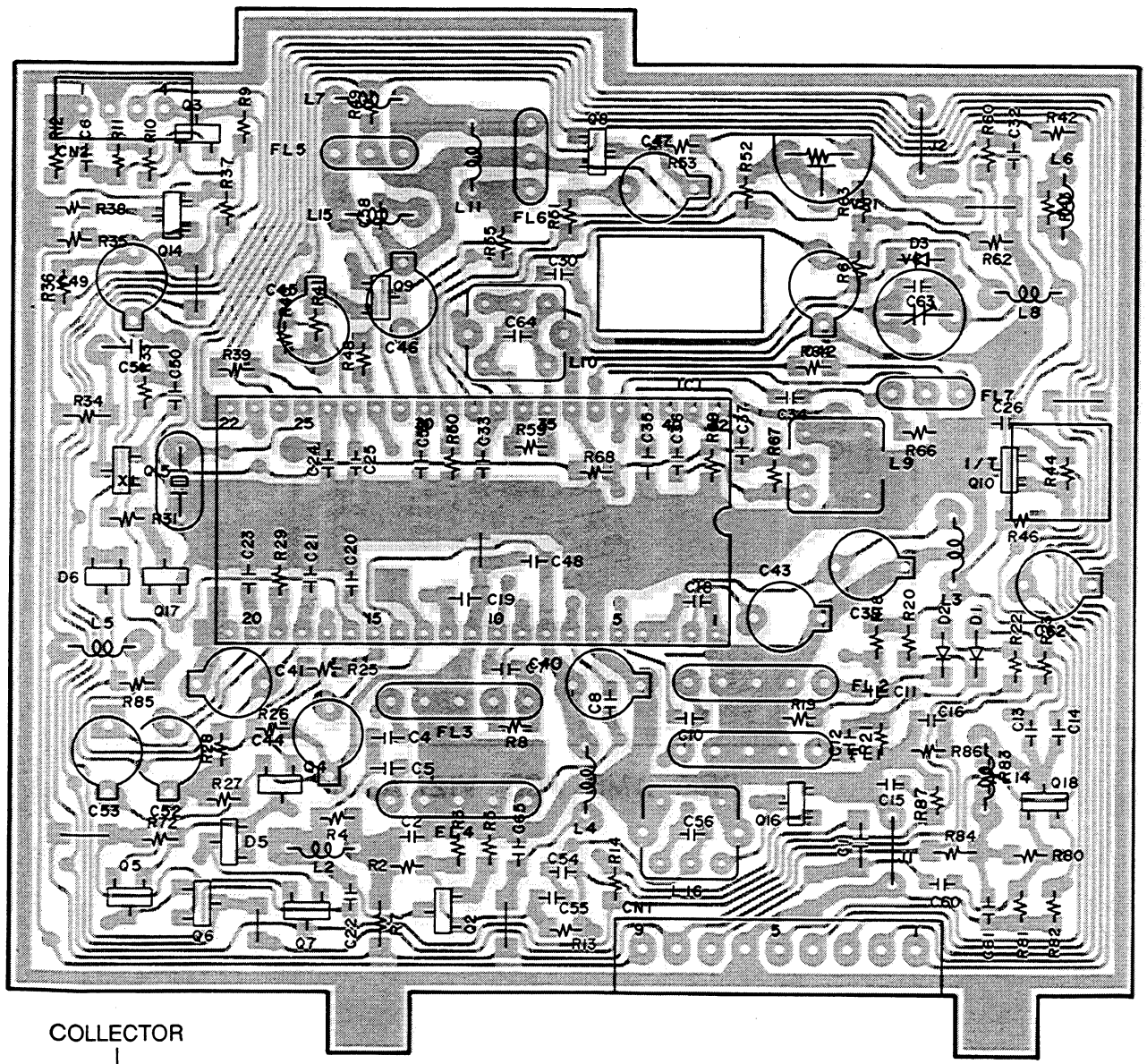
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
( ):REC MODE

VS-G420, G425, G435SEG
PRE AMP
SCHEMATIC DIAGRAM

No.10-8 V120708M
A3



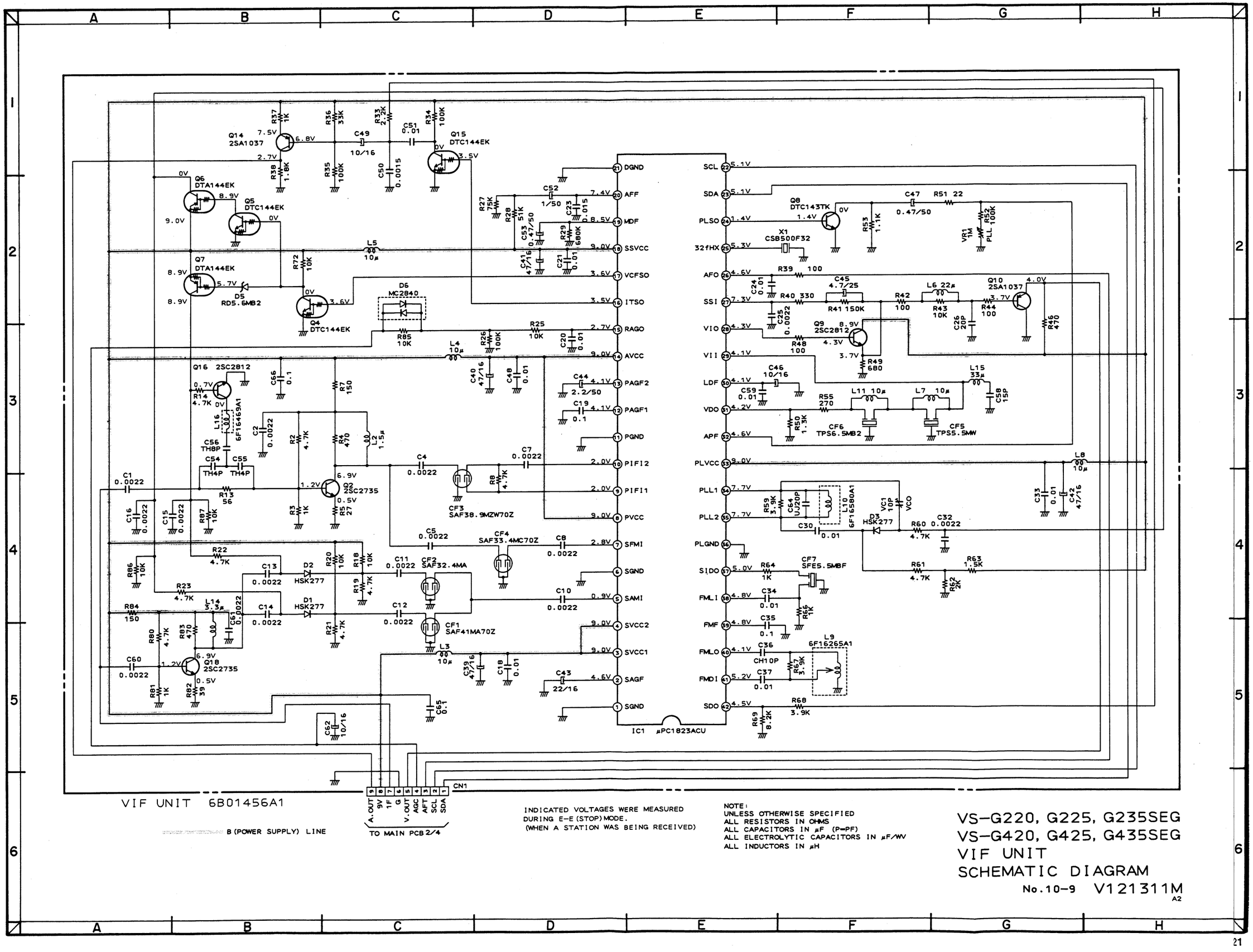
PRE AMP PCB V1211A501B



COLLECTOR

BASE EMITTER

VIF UNIT 6B01456A1



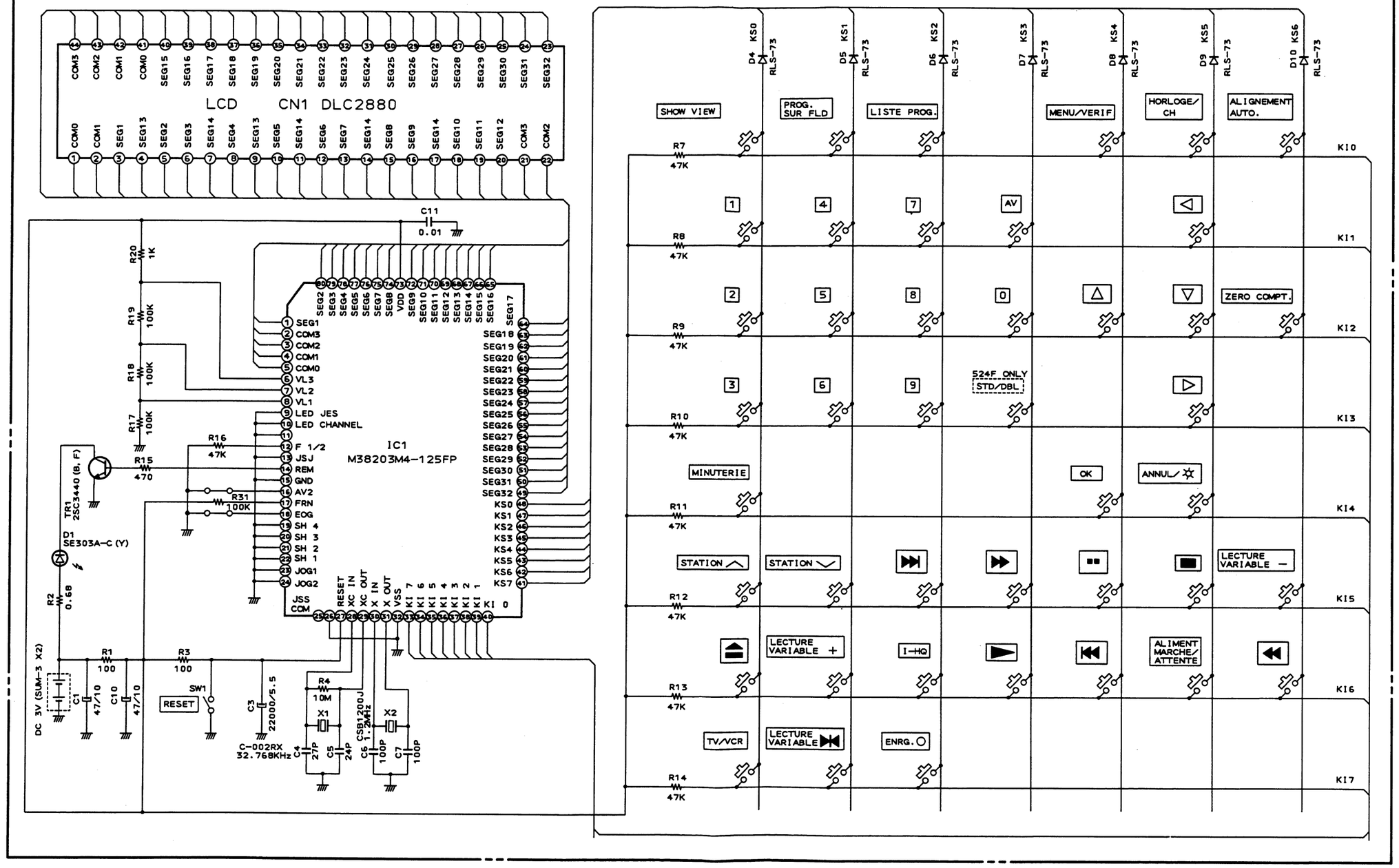
VIF UNIT 6B01456A1

B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH

VS-G220, G225, G235SEG
VS-G420, G425, G435SEG
VIF UNIT
SCHEMATIC DIAGRAM
No.10-9 V121311M
A2



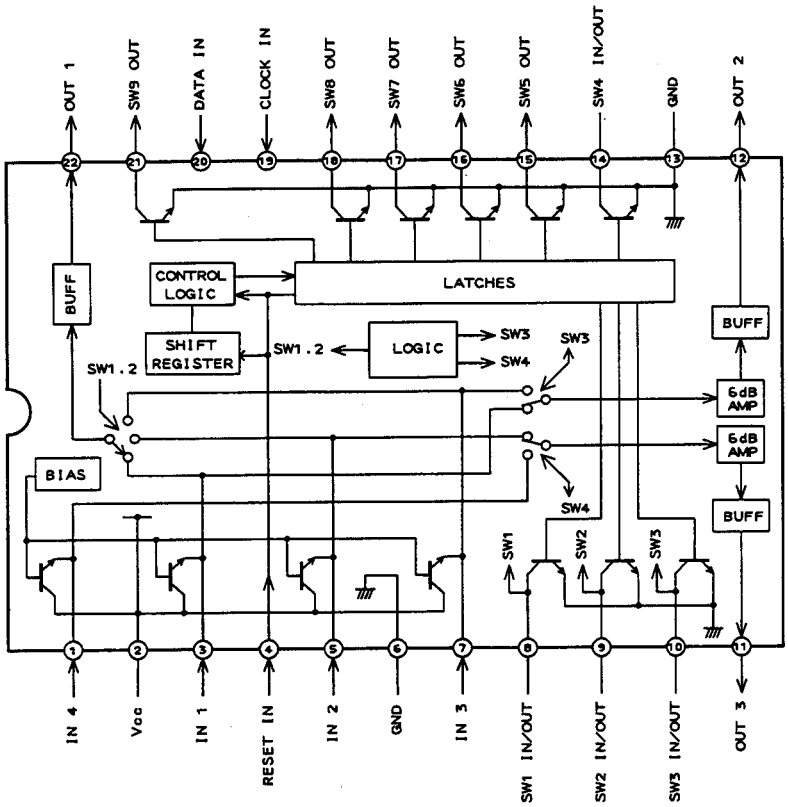
※ THIS SCHEMATIC DIAGRAM IS ONLY FOR REFERENCE. TO AVOID REPLACING INDIVIDUAL PARTS, REPLACE THE ENTIRE UNIT ONLY.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

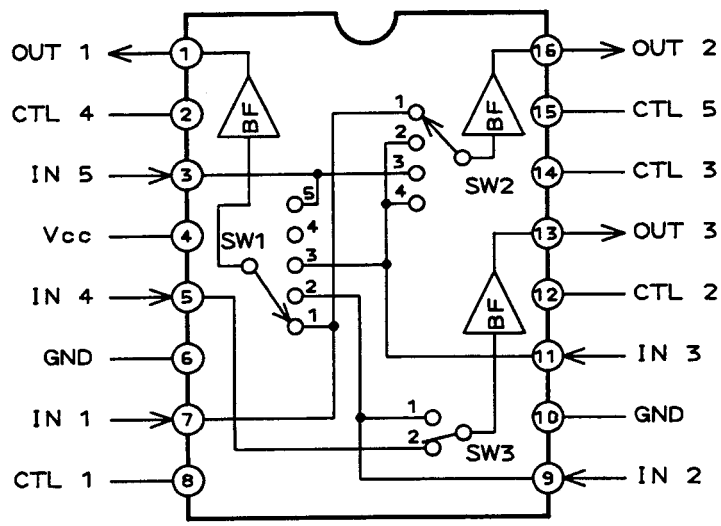
RC-X521F, X524F
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM

No.10-10 V120709M
A2

BA7630S (VIDEO SIGNAL SELECTOR)



BA7631 (AUDIO SIGNAL SELECTOR)



OUT1 (SW1)

CTL 1	CTL 2	CTL 5	SELECT
L	L	L	IN 1
L	H	L	IN 2
H	L	L	IN 3
H	H	L	MUTE
H or L	H or L	H	IN 5

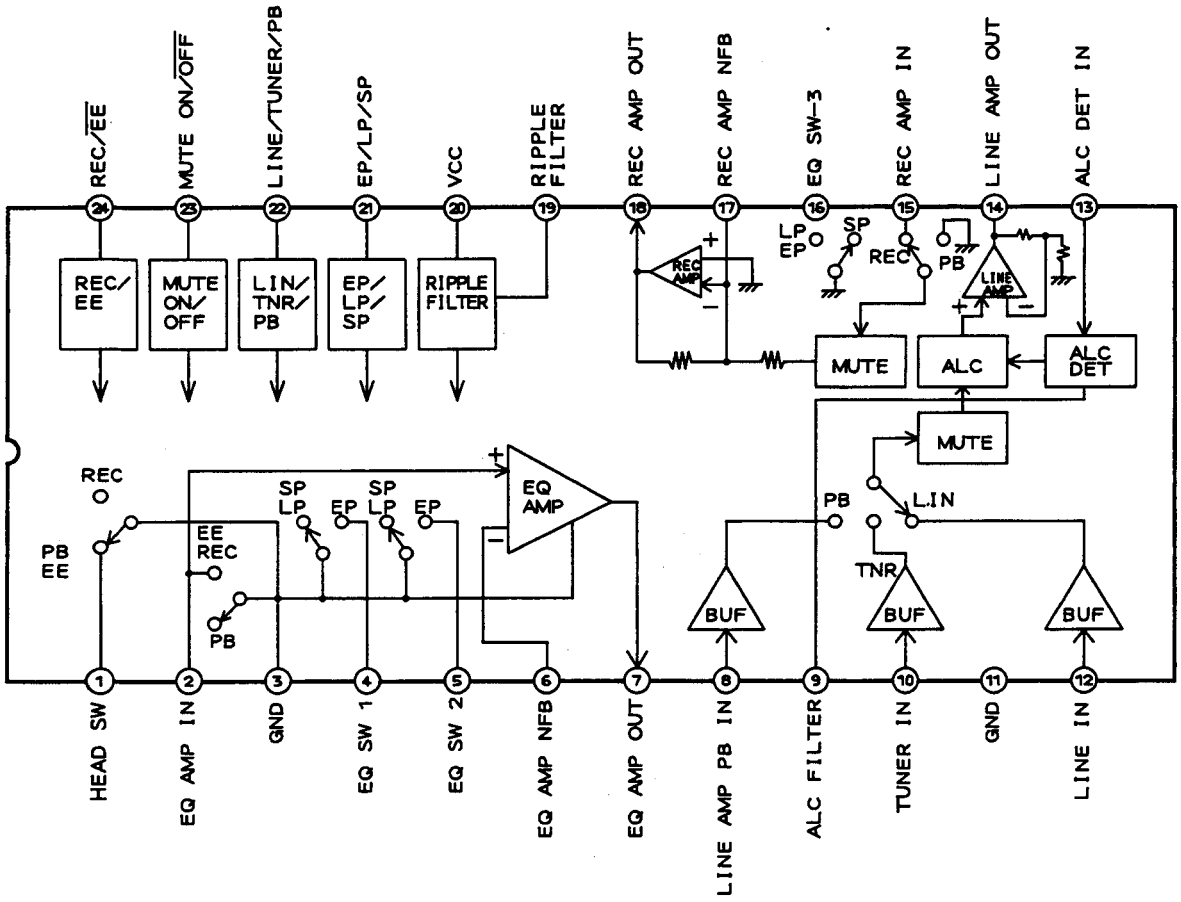
OUT2 (SW2)

CTL 3	CTL 5	SELECT
L	L	IN 1
H	L	IN 3
L	H	IN 5
H	H	IN 3

OUT3 (SW3)

CTL 4	SELECT
L	IN 2
H	IN 4

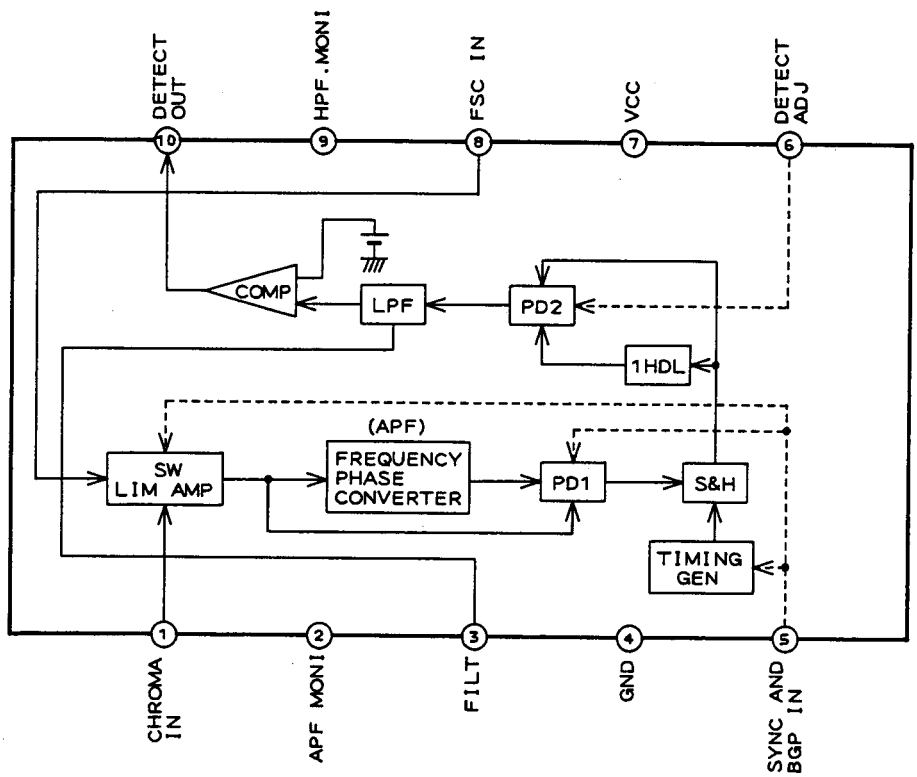
LA7285 (AUDIO SIGNAL REC/PB AMP)



SWITCH FUNCTION

	DC LEVEL		
	0 ~ 1.0V	1.8 ~ 2.6V	3.6V
(21) PIN	SP	LP	EP
(22) PIN	PB	TUNER	LINE

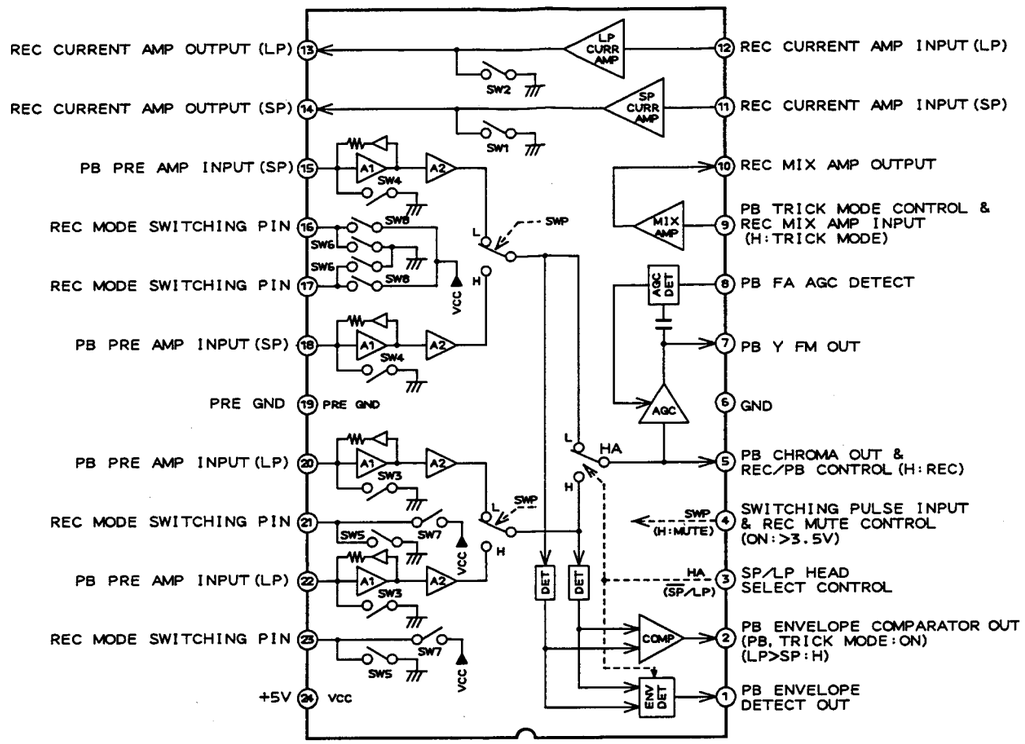
LA7356 (PAL/SECAM DETECTOR)



LA7345AM (Y/C SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	NL EMPH/ SP SW	–	Non linear emphasis filter pin./ SP/EP select control pin (SP mode : > 3.9 V, EP mode : L).
2	DETAIL ENH/NC FILT	I	Turns detail enhancer or high pass noise canceller off. However, the high range side of high pass noise canceller can not be turnd off (OFF : > 3.5 V).
3	VCA FILT	–	Voltage control amplifier capacitor connecting pin.
4	VCA IN	–	Voltage control amplifier input pin.
5, 29, 31			Not used.
6	GND	–	Ground.
7	CCD DRV	O	CCD drive output pin (By connecting to the GND at 3.9 k ohms, the 27pin outputs C.SYNC during playback).
8	PICT CONT/ EDIT2 CONT	–	PB : Picture control pin (2.0 V ~ 2.5 V : soft, 2.5 V ~ 3.0 V : hard). / Edit on/off switch (EDIT on : > 3.6 V). REC : During the REC SP mode, a 1/2 fh carrier shift is performed.
9	ACC/ SECAM CONT	–	REC : ACC filter pin. / PB : SECAM mode control pin (SECAM mode : > 4.0 V).
10	LC IN/OUT	I/O	Low chroma signal input / output.
11	ACC CARR LEAK BAL	–	ACC carrier leak balancer filter pin.
12	REC APC	–	PB : TRICK mode control pin (TRICK mode : > 3.5 V). / REC : REC APC filter pin.
13	XO IN	I	X'tal OSC input (f = 4.43 MHz).
14	XO OUT	O	X'tal OSC output (f = 4.43 MHz).
15	NC CTL/CHA	–	High pass noise canceller control pin.
16	2FSC OUT	O	2 fsc output pin.
17	CHA	–/I	Filter change mode (3.58 MHz mode : > 1 V, 4.43 MHz mode : < 0.2 V).
18	SLD	–	Side lock filter pin.
19	AFC/APC FILT	–	REC AFC/PB APC filter pin.
20	COMB DRV	O	Driving output for comb filter.
21	KILLER	–	Color killer filter pin (connecting to VCC with 10 k ohms turns color killer on).
22	PB AMP IN/ MESEC CONT	I/–	PB chroma signal input from comb filter. / MESECAM mode control pin (MESECAM mode : > 3.0 V).
23, 31	VCC1,2	–	+5 V power supply.
24	Y/C MIX IN	I	PB chroma signal input for Y/C mixer.
25	4.2V REG	O	4.2 V regulator pin.
26	CNR DRV	O	CNR drive output.
27	SYNC OUT	O	REC : composite sync output pin, PB : QH sync output
28	QV,QH,CHR INS	I	Quasi V-SYNC pulse input pin.
30	V.OUT	O	Composite video signal output pin.
32	BGP OUT/ NTSC-H	O/–	Burst gate pulse output pin. / NTSC mode control pin (A current of more than 150 µA will change the mode to NTSC).
33	V.IN	I	Composite video signal input pin.
34	AGC FILT	–	Auto gain control filter pin. /
35	AGC ADJ/ PB FM IN	–/I	REC : EE video level adjustment pin. PB : PB FM Y signal input pin.
36	FM Y OUT/ DOC STOP-H CONT	O/–	REC FM Y signal output pin. / Dropout compensator stop control pin (DOC STOP : > 3.9 V).
37	ROT IN LP CONT	I/–	Chroma rotary pulse input pin. / LP mode control pin (LP : > 1.85 V, SP/EP : < 1.55 V).
38	MOD IN/ YNR/LNC CHA	I/–	REC : REC FM modulator input pin. / PB → open : (SP, LP/EP : YNR), 1.0 V < : (SP, LP/EP : LNC)
39	DOP OUT	O	Dropout pulse output pin.
40	MAIN DE-EMPH1	–	Control of the main de-emphasis level & frequency.
41	MAIN DE-EMPH2	O	PB : main de-emphasis output pin. REC : BPF drive output.
42	CLAMP IN	I	Clamp input pin.
43	EMPH OUT & REC/PB SW	O/–	Main emphasised signal output pin. / REC/PB select control (PB mode : > 3.8 V, REC mode : L).
44	MAIN EMPH	–	Main emphasis filter pin.

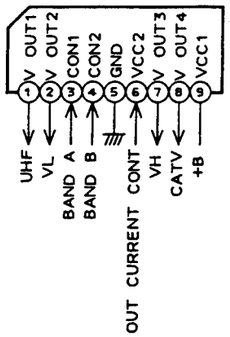
LA7372 (4CHPB HEAD AMP/REC AMP)



LOGIC SW CONDITION

			CURR. AMP MUTE		PB AMP CONTROL		HEAD SHORT		REC DRIVE	
		HA	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
REC	SP	L	OFF	ON	ON	ON	ON	OFF	OFF	ON
	LP	H	ON	OFF	ON	ON	OFF	ON	ON	OFF
PB	SP	L	ON	ON	ON	OFF	ON	OFF	OFF	OFF
	LP	H	ON	ON	OFF	ON	OFF	ON	OFF	OFF
	TRICK	L/H+TRICK:H	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

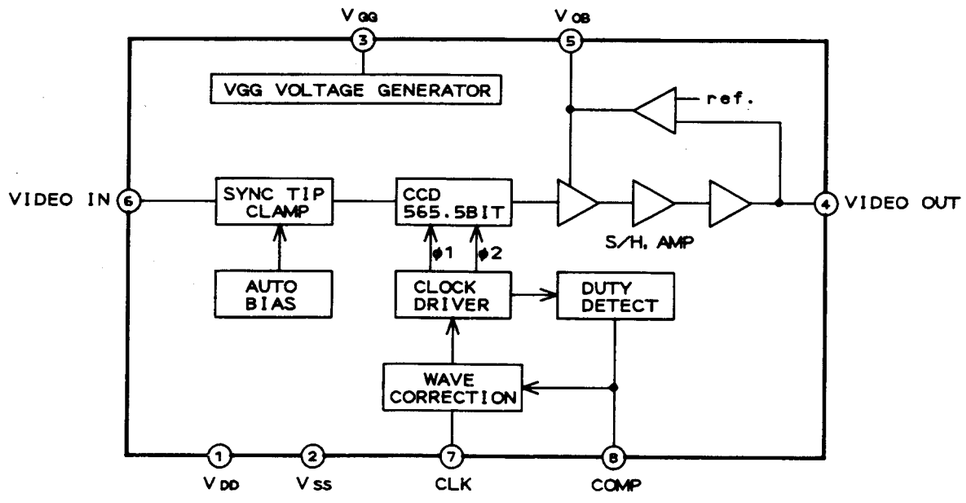
LA7910 (TUNER BAND SELECTOR)



INPUT		OUTPUT			
CON1	CON2	V OUT1	V OUT2	V OUT3	V OUT4
L	L	H	Z	Z	Z
H	L	Z	H	Z	Z
L	H	Z	Z	H	Z
H	H	Z	Z	Z	H

Z:HIGH IMPEDANCE

LC8992 (CCD 1H DELAY LINE)



M37774M5H (SYSTEM CONTROL & SERVO MI-COM FOR SECAM)

PIN NO	PORT NAME	I/O	FUNCTION
1	SYS RDY	O	Data transfer ready output.
2	TU PWM	O	Tuning voltage output for tuner (PWM).
3	CM PWM	O	Capstan motor's speed & phase error output (PWM).
4	DM PWM	O	Drum motor's speed & phase error output (PWM).
5	SRP	I	Supply reel pulse input.
6	TRP	I	Take up reel pulse input.
7	VJ	O	Video judge output. (no signal : L)
8	C.SYNC	I	Cmposite sync input (for video judge).
9	$\overline{EE}$	O	EE control pin.
10	$\overline{PB}$	O	PB mode control pin.
11	$\overline{REMOCON}$	I	Remote control signal input.
12	$\overline{REC.S}$	O	REC start control output (for video section).
13	VP	O	Quasi V pulse signal output.
14	V.SWP	O	Video head switching pulse output.
15	C.ROT	O	Chroma rotation pulse output pin.
16	HEAD CTL	O	Video head SP/LP select.
17	COMP OUT	O	Comparator input (for head select when CUE/REV).
18	I-HQ PWM	O	I-HQ ANC voltage output.
19	VPS RDY	I	VPS MI-COM transfer ready signal input.
20	$\overline{P.DOWN}$	I	Power down detect input.
21	$\overline{SHORT}$	I	Power supply abnormal condition detect input (L:REG voltage is too high).
22 ~ 25	RSW1 ~ 4	I	Input from the rotary (mecha position detect) switch 1 ~ 4.
26,81	VCC	–	+5 V power supply.
27	TRQUP	O	Loading motor torque control.
28	LM F	O	Loading motor direction control (forward).
29	LM R	O	Loading motor direction control (reverse).
30,44 83,84	N.C	–	No connection.
31	$\overline{A.EE2}$	O	Audio EE/PB select control output.
32	$\overline{A.OSC}$	O	Audio bias OSC start control.
33	$\overline{A.REC}$	O	Audio REC start control.
34	A.EE	O	Audio EE/PB select control output.
35	NUB	–	No connection.
36	NUA	–	No connection.
37	$\overline{RESET}$	I	Reset input.
38	X IN	I	Main clock OSC input (f = 16 MHz).
39	X OUT	O	Main clock OSC output (f = 16 MHz).
40	CLK SEL	I	Clock select input (H : main & sub clock OSC are active, L : only sub clock OSC is active).
41	VSS	–	Ground.
42	XC IN	I	Sub clock OSC input (f = 32.768 kHz).
43	XC OUT	O	Sub clock OSC output (f = 32.768 kHz).
45	INT/$\overline{EXT}$	O	Input select control output.
46	$\overline{TV}$/VCR	O	TV/VIDEO select control output.
47	I² C SDA	I/O	EEP ROM serial data input/output.
48	I² C SCL	O	EEP ROM serial clock output.
49	T.MUTE	O	Tuner mute control.
50	A.MUTE	O	Audio mute control.
51	V.SYNC MON	O	V.SYNC monitor output.
52	I-HQ MD2	O	I-HQ mode control out (high output level tape).
53	I-HQ MD1	O	I-HQ mode control out (low output level tape).
54	$\overline{AFT}$	O	AFT on/off control output.
55	BAND B	O	Tuner band select output.
56	BAND A	O	Tuner band select output.
57	$\overline{AFT-H}$	I	AFT high level judge input when tuning.
58	AFT-L	I	AFT low level judge input when tuning.
59	REC SAF	I	REC safety SW input.
60	$\overline{AL}$	O	AL power supply line control output.

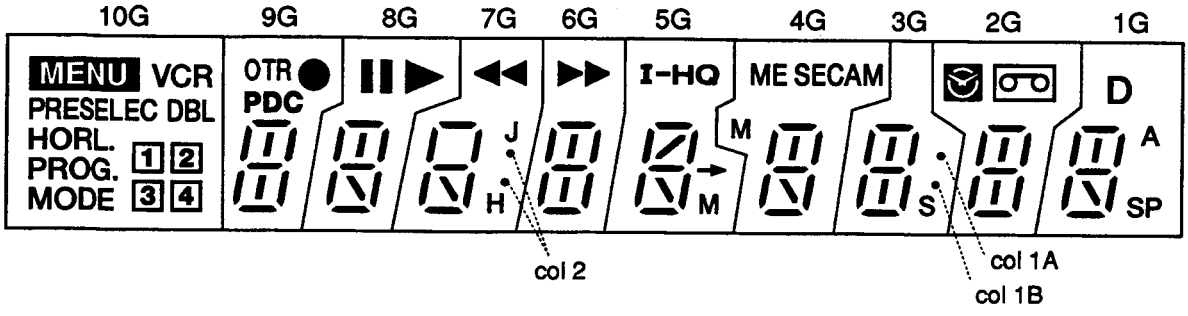
PIN NO	PORT NAME	I/O	FUNCTION
61	$\overline{F/R}$	O	Capstan motor direction control (FWD/REV).
62	CM STOP	O	Capstan motor stop control.
63	DEC.CTL	I	Decoder on/off control input.
64	$\overline{CTL.GAIN}$	I	CTL AMP gain select control when FF/REW .
65	AMP VCC	–	+5 V power supply for analog AMP section.
66	DM.PG	I	Drum motor PG signal input.
67	DM.FG	I	Drum motor FG signal input.
68	CM.FG	I	Capstan motor FG signal input.
69	AMP VREF OUT	O	Reference voltage output for analog AMP.
70	AMP VREF IN	I	Reference voltage input for analog AMP.
71	CLAMPF	I	CTL clamp AMP positive input.
72	CLAMPR	I	CTL clamp AMP negative input.
73	CTLAMP OUT	O	CTL AMP output.
74	AMPC	–	Capacitor connecting pin for CTL AMP.
75	CTLAMP IN	I	CTL AMP input.
76	CTL+SWOUT	O	CTL switched output.
77	CTL+	I	CTL positive side input/output.
78	CTL–	I	CTL negative side input/output.
79	CTL VSS	–	Ground for CTL.
80	AMP VSS	–	Ground for AMP.
82	VREF	–	Reference voltage input for A/D convertor.
85	ES	I	End sensor input.
86	SS	I	Start sensor input.
87	SDP	I	SECAM (MESECAM) judge input (SECAM : H).
* 88	B/W.SEC	O	PAL/MESECAM/NTSC switching.
89	C+.CLK	O	Serial clock output to IN/OUT switching IC.
90	C+.DATA	O	Serial data output to IN/OUT switching IC.
91	TRIC	O	H when trick mode.
92	ENV.DET	I	Video envelope detect input.
93	C.SYNC	I	Composite sync input (for internal Vsync separator).
* 94	SEC.MES	O	SECAM & MESECAM select output
* 95	$\overline{SEC.MES}$	O	SECAM & MESECAM select output.
96	$\overline{SP}$	O	Tape speed select output.
97	EE	O	EE control pin.
98	SYS SO	O	Serial data out to operation MI-COM
99	SYS SI	I	Serial data in from operation MI-COM.
100	SYS CLK	O	Serial clock output to operation MI-COM.

* COLOUR SYSTEM CONTROL CONDITION

PIN	PORT NAME	SYSTEM		
		PAL	SECAM	MESECAM
88	B/W. SEC	L	H	L
94	SEC. MES	L	H	H
95	$\overline{SEC. MES}$	H	L	L

FLD FV683G

GRID ASSIGNMENT



(5G)

(7G)

(9G,6G,3G,2G)

(8G,4G,1G)

ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	MENU	a	a	a	a	a	a	a	a	a
P2	1	b	b	b	b	b	b	b	b	b
P3	3	c	c	c	c	c	c	c	c	c
P4	HORL.	d	d	d	d	d	d	d	d	d
P5	MODE	e	e	e	e	e	e	e	e	e
P6	2	f	f	f	f	f	f	f	f	f
P7	4	g	g	g	g	g	g	g	g	g
P8	PRESELEC	h	h	col 2	h	h	h	h	h	h
P9	PROG.	j	j	j	j	j	j	j	j	j
P10	VCR	OTR	▮▮	◀◀	▶▶	I-HQ	ME	S		D
P11	DBL	PDC	▮	J	—	→	M	col 1A		A
P12	—	●	▶	H	—	M	SECAM	col 1B	—	SP

AKAI ELECTRIC CO.,LTD.
12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
SERVICE DEPARTMENT TEL:Tokyo (3745) 9884 TELEX : J26261

Printed by: Schaltungsdienst Lange, Berlin (GERMANY)